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VOL. VIII.—PART I.

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Duff, W., *Ditto, Bengal Service.*
Forsyth, J., *Assistant Surgeon, Ditto ditto.*
Galt, H. M., *Ditto ditto, Ditto ditto.*
Guthrie, H. *Surgeon, Ditto ditto.*
Hathway, L., *Surgeon, Bombay Service.*
Hart, F. *Assistant Surgeon, Bengal Service.*
Henderson, J., *Surgeon, Ditto ditto.*
Lawder, J., *Madras Service.*
Ludlow, S., *Superintending Surgeon, Bengal Service.*
McKinnon, C., *Bengal Service.*
McGowan, A., *Calcutta.*
Montgomerie, A., *Surgeon, Bombay Service.*
Phillipson, R., *Assistant Surgeon, Bengal Service.*
Rhodes, W., *Ditto ditto, Ditto ditto.*
Rooke, R. P., *Assistant Surgeon, Bombay Service.*
Ronald, J., *Surgeon, Bengal Service.*
Watson, E. W., *Ditto ditto, Ditto ditto.*

1836.

Medical and Physical Society of Calcutta.

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Appendix, p. xxxiii. note, l. 3, *for* " their being," *read* " having."

MEMOIR

OF

THE LATE W. TWINING, Esq.

DRAWN UP

BY H. H. GOODEVE, Esq., M. D.

It has once more become the melancholy duty of the Medical Society to record the death of one of its brightest ornaments—one, who since the days of its founder Dr. John Adam, has done more by his activity as a member, by his unwearied energy and exertions, as Secretary, and by his contributions as a writer, to promote the interests and prosperity of the society, than any other individual ever enrolled in the list of its members. But great and irreparable as the loss of Mr. Twining is to us as a body, it is not less a severe public misfortune to the medical profession at large, and to the Indian community; whilst his decease will be ever most deeply mourned by the numerous list of private friends whom his amiable character, and surpassing worth, had drawn around him. He was one of those favoured individuals whose career through life was as conspicuous for talent, and the zealous discharge of public duty, as he was himself engaging and beloved in the relations of private friendship and domestic society.

In drawing up a memoir of the deceased, we were of course desirous to have afforded some sketch of the early life and course of study pursued by Mr. Twining, before he entered into the profession of which he was destined to become so distinguished a member. Unfortunately, in the present instance, it has been found impossible to collect materials in this country to form any account of these interesting particulars; yet, much as the omission is to be regretted, considering the length of time which must elapse ere a reference could be made to Europe, it is deemed better not to delay the publication of this just tribute to his memory.

The subject of this memoir was born in Wales, where his father was a clergyman, but in what part of the principality is uncertain. The first event of Mr. Twining's life about which any precise information can be gained is, that in 1808 he was a student of Guy's Hospital, being then about 18 years of age. Sir A. Cooper, Messrs. Forster and Lucas, were the Surgeons of the Hospital; and Sir Astley, and Mr. Cline, were the principal lecturers. Here he distinguished himself by the same diligence and application which he ever afterwards displayed through life; and so much interested was he in the pursuit of Anatomy, that instead of availing himself of the summer recesses in the Medical schools in London to leave town and enjoy himself in the country, the plan usually adopted even by very industrious students, he entered himself as a pupil to that celebrated Anatomist the late Mr. Joshua Brookes, whose class remained open during the summer months. He there labored with unwearied industry,

and with so much success, that his instructor, delighted with his zeal and acquirements, employed him as an assistant in his own private dissections, and afterwards made him his Demonstrator, an office of great honor for so young a man. Had Mr. Twining remained in that situation, and devoted himself thenceforth to the employment of lecturing, there is no doubt that he would ultimately have stood in the highest rank as an Anatomical teacher;—and where could a member of the medical profession wish to be more proudly placed? But he was destined to shine in another sphere, and in a distant clime.

He remained only two years with Mr. Brookes, and then lured by the prospect of instruction which the brilliant campaigns in the Peninsula offered to all young Surgeons, and perhaps also tempted by a natural desire of seeing the world under such advantageous circumstances, he entered the Army Medical Department, and in 1810 joined as Hospital Assistant the British troops in Portugal under Lord Wellington. In this capacity he served with the army during the whole course of the war, and was present at most of those glorious battles which contributed so pre-eminently to raise the British name.

In March 1814, he was promoted to the rank of Staff Assistant Surgeon, and placed on the Staff of General Lord Hill, in which capacity he entered Paris with the allied army. In 1815 he had the good fortune to witness the ever memorable conflict and crowning victory of Waterloo.

It has been said that at Waterloo he was injured by the trampling of a horse upon his chest, and that by

that accident the foundation of the disease which eventually destroyed him was laid. However, it does not appear that much dependence can be placed on this account, for his most intimate friends never heard him mention the circumstance. At any rate the injury could not have been severe, for he was busily engaged with the wounded immediately after the battle, and again accompanied to Paris the general officer upon whose staff he was acting.

In after life he was fond of talking of his campaigns, and relating his adventures. He always spoke of them with a degree of pleasure, which shewed that however great were the hardships to which he was exposed, (and they were by no means few,) the excitement and animation of the scene fully compensated for the loss of personal comfort, and afforded him an interest and an occupation peculiarly delightful to his young and ardent mind.

After the termination of the war, he remained in Lord Hill's family till his marriage, an event which took place in 1817. He was then stationed with a regiment at Portsmouth. In 1819 he was employed in the Hospital at Chatham ; and for a short time also he was Staff Assistant Surgeon at the Cavalry Depôt at Maidstone. But after the turmoil and perpetual excitement in which he had been engaged for so many years, the inactivity of a garrison life was by no means congenial to his feelings ; to obtain an employment more suited to his taste he volunteered for foreign service. He was accordingly ordered to the West Indies; but this order he declined to obey, stating his wish to be sent to the East, and claiming priority of choice on

account of his previous services. At that time, however, he was disappointed; but shortly afterwards he was asked by Sir Edward Paget, to join him in Ceylon, as his personal Surgeon—an offer of which he gladly availed himself, and in 1821, he arrived in that colony.

In 1823, when Sir Edward, after having been appointed to the command of the Indian Army, arrived in Bengal, he was accompanied by his Surgeon, and Mr. Twining travelled with him to the Upper Provinces in his first tour of inspection. Calcutta, at that time, presented an inviting field for an aspiring member of the profession, and Mr. Twining, influenced by that circumstance, and thinking, moreover, that it was, at length, time to quit his wandering career of life, resolved to leave His Majesty's Service, and enter that of the Honorable Company, in the attainment of which object he was kindly assisted by the Commander-in-Chief. In 1824, Sir Edward Paget obtained for him the appointment of Assistant Surgeon on the Bengal Establishment. He still retained his commission in the King's Service, and held it till 1830, when he was compelled by the home authorities to relinquish it, or resume his duties with a British Regiment. The latter alternative he was not likely to choose, considering the advantageous position in which he then stood as a successful practitioner in Calcutta; and on the 7th December, 1830, he accepted the regulated commuted allowance of officers of his rank, and quitted the British Army.

He remained on Sir Edward's Staff for a short time, and was then placed in the General Hospital as Senior permanent Assistant—a situation he held until the time of his death.

From this period may be dated the commencement of the brilliant, though unhappily brief, professional career which has rendered Mr. Twining so conspicuous in life, and so much regretted in death. Already a distinguished Military Surgeon, well prepared by education, and with a mind stored with knowledge and experience of the most valuable kind; possessing habits of patient investigation and unwearied industry, with an acuteness of perception, and a power of generalization, enjoyed by few individuals; placed, moreover, in a situation where ample opportunities were daily offered for the exercise of these qualifications, it is not surprising that Mr. Twining should have risen to the eminence which he so deservedly reached.

Mr. Twining was not long in the General Hospital ere the public began to discover his worth, and to value his services, proportionately—he soon became extensively engaged in private practice. People of all ranks and religions, Europeans and Natives, flocked to him, and perhaps no man was ever better fitted to succeed in this department of his profession. His profound knowledge of disease in every form under which it could be presented to him, together with the natural firmness of his character, gave a marked decision and promptitude to his manner which at once inspired the sick with confidence and hope. This decision of manner never degenerated into sternness; for in nothing was he more remarkable than for the kind, soothing, and even affectionate treatment, and unremitting attention, by which he won the hearts of his patients, making his approach to the bed-side a moment of joy to the sufferer, unmixed with that dread, which the physician's visit too often pro-

duces. He formed his judgment upon the nature of the diseases before him rapidly but coolly, and few men perhaps surpassed him in the correctness of their medical opinions and prognostications. His practice was bold and energetic, yet very simple. When Mr. Twining had once resolved upon the mode of treatment which he considered necessary for any particular case, he pursued the plan which he had marked out with steadiness and determination, until a favorable result rewarded his efforts, or till some new feature in the case imperiously required a change of measures. He had a strong contempt for that vacillation which often induces a less decided practitioner to alter his treatment with every trifling symptom, and to abandon some acknowledged method of cure, before it can have time to produce a due effect upon the disease—a course too often pursued, either because the patient, rendered irritable by sickness, appears discontented that the remedy is so slow in its operation, or peevishly declares it useless; or because the physician has not perseverance, or confidence enough, to allow it a sufficient trial. Some indeed have accused Mr. Twining of having been too firmly wedded to his peculiar views. He did perhaps usually prefer his own opinions to those of others, and acted upon them with considerable ardour; but surely such a proceeding is far more satisfactory to the physician, and safer to the patient, than that of the waverer, "who is blown about with every wind of doctrine." The successful nature of Mr. Twining's practice affords a convincing proof of the justness of his own conclusions; but so far from refusing to adopt any improvements or new views which were from time

to time introduced to the notice of the profession, never was any man more ready to give them a fair trial. His almost unequalled love of medicine as a science made him naturally curious about every thing connected with it, and when convinced of the value of any proposed alteration, he was ever ready to promote its reception. Indeed we owe to Mr. Twining the *adoption* of many admirable modes of treatment in this country, besides the introduction of those which he had himself the merit of originating. He was remarkable for never seeking a second opinion, unless he felt that some good might accrue from it. He had an innate repugnance to ordinary consultations, and seldom acceded to the requests of his patients in this point, unless he thought that something might be gained by it. When however he did take the opinion of another, it was invariably followed up, though it might be in opposition to his own, provided it was supported on reasonable grounds.

The extent of his practice had latterly became so great, and his exertions were so severe, as visibly to impair his health; though with unshaken fortitude, he never permitted illness to serve him as an excuse for idleness: and he used to boast, that he had not been absent from his duty for a single day since he had been in Calcutta.

Though naturally of a robust and healthy constitution, the most iron frame could not have withstood the intense labor which he underwent, and no doubt he was gradually laying the foundation of the disease which destroyed him. Besides the extensive nature of his general practice in Calcutta, his public duties

were by no means light. In addition to his appointment in the Hospital, he was Surgeon to the Calcutta Jail and the Upper Orphan School, and he was unremitting in the discharge of the duties attached to these appointments. He attended the General Hospital at all hours of the day and night, and much of his valuable observation upon disease was drawn from the close attention which he paid to the cases under his charge in that institution.

Not content, however, with all these occupations, Mr. Twining was a persevering student; he kept pace in his reading with the latest medical works, and was better informed, upon the progress which was making in Europe in all matters of science, connected with his profession, than many who have far more ample leisure. He was constantly engaged in some interesting investigation, which required difficult experiments and deep thought for its elucidation; and occupied as he was, it is singular how he could have found time to write the numerous papers which he brought before the public, so replete with research, and enriched by valuable information as they invariably were. He had however acquired the desideratum of economising his time, so as to accomplish what others less industrious are apt to believe impossible. He was frequently at work during a large portion of the night, and when he had any great object in view, he used not to go to bed at all.

The History of Mr. Twining's connection with the Medical Society is a subject which calls forth our admiration, mixed with a train of melancholy reflections: for it is impossible to look back upon the unceasing interest which he took in its welfare, and the earnest

and never-failing exertions which he made in its behalf, without feeling the warmest gratitude for his invaluable services, and the deepest grief that the voice to which its members used to listen with so much attention and pleasure should be now hushed, and the pen from which so much instruction was derived will write no more.

Mr. Twining was amongst the earliest Members of the Society, and from the beginning contributed with all his energy to promote its success. He well knew the importance of such an institution, in calling forth the latent resources of medical and scientific knowledge in this country; and its successful progress and rapid advancement were among the most fertile sources of gratification which he possessed. He was not, however, content with his own exertions in its favour;—he never allowed any opportunity to escape of enlisting the services of others, and of exciting them to labour in its behalf. He inspired all around him to exert themselves with an ardour which, but for his example, they perhaps never would have evinced. He was elected a Member of the Committee of Papers soon after he joined the Society in 1824, and upon the death of the lamented Dr. John Adam, in 1830, he was chosen to the office of Secretary—a situation which he filled with a degree of unremitting zeal and attention almost without parallel in the records of any other scientific body. He was indeed the very life and soul of the Society, and by his death, it has sustained a loss for which nothing can compensate.

Towards the end of 1834, he was, though most reluctantly, compelled to resign his office into the

hands of Mr. Bramley ; for the extent of his other occupations so absorbed his time, that he found himself unable to continue the duties of that department. His eyes, moreover, were beginning to suffer from the conjoined effects of the climate and his nocturnal studies. He was affected with permanent muscæ volitantes. He nevertheless relaxed not in his strenuous exertions in the Society's behalf. He was never absent upon a single occasion from its interesting monthly meetings, and continued throughout to take the same leading part in its debates which he had previously occupied. When we remember the numberless urgent and imperious calls upon his time and attention consequent upon his extensive practice, this will be regarded as no trifling mark of his affectionate earnestness for the Society's well-being. He also never ceased to send valuable communications, and to contribute, from time to time, most interesting papers for discussion in the Society, and for publication in its Transactions. As an example of his industry, it may be mentioned, that for upwards of a week before his last illness, fatigued as he was by his daily labor, he had risen every morning before three o'clock, to complete a most interesting paper upon the poison of lead, which he was anxious to bring before the next meeting ; little thinking that, ere that day should arrive, he would himself be lying in the grave.

In the course of the last ten years, Mr. Twining furnished the Society with a great number of papers upon various subject ; upwards of twenty of these have been published. They are as follows, in the order in which they appeared :

1*st.* Observations on the Filaria or Thread-worm found in the eyes of Horses in India, vol. i.

2*nd.* Observations on the Fever which prevailed in Calcutta, in June, July, and August, 1824, vol. ii.

3*rd.* Observations on Diseases of the Spleen, particularly in vascular engorgement of that organ, vol. iii.

4*th.* Report of Himalaya Rhubarb, as administered in the Presidency Hospital, *do.*

5*th.* Cases of Cholera treated by Cape remedy, or Moravian Specific, *do.*

6*th.* Case of Dislocation of the Humerus, vol. iv.

7*th.* Observations on the employment of large doses of Ipecacuanha in Dysentery without exciting vomiting, *do.*

8*th.* On the properties of Lactucaria, the produce of India, *do.*

9*th.* On the effects of Blood-letting in the cold-stage of Intermittent Fever, vol. v.

10*th.* On Stricture of the Urethra and Diseases of the Urinary Bladder, *do.*

11*th.* On Occlusion of the Biliary Ducts, *do.*

12*th.* Case of Urinary Calculus, and Analysis of some Calculi from Natives of India, *do.*

13*th.* Tumor extirpated from the orbit of a Hindu, *do.*

14*th.* Abstract of a Report on Seharunpore Senna, *do.*

15*th.* Ditto do. on do. Hyoscyamus, *do.*

16*th.* Observations on the effects which occasionally follow the use of Iodine, vol. vi.

17*th.* On the Tartaric Solution of Opium used in the General Hospital, *do.*

18*th*. On variety in the effects of different samples of Croton Oil, *do*.

19*th*. Case of Compound Fracture of the Lower Extremity, in which there was no union of the Tibia by bone for many months, and a firm union took place after Amesbury's apparatus had been applied for two months, vol. vii. p 1.

20*th*. Some account of the Fevers which prevailed in Calcutta in the year 1833, vol. vii. p. 2.

21*st*. On the effects of the Acetospirituous Tincture of Cantharides, *do*.

22*nd*. Case of Dracunculus occurring in Calcutta, *do*.

Amongst this list of communications will be found some of great interest, as developing those views of disease, and improvements in practice, which Mr. Twining has the merit of having first introduced into this country, and which served as the germ of his invaluable work upon the Diseases of Bengal. The papers here more directly alluded to are—

The Observations on Diseases of the Spleen, particularly in Vascular Engorgement of that organ. Observations upon the employment of large doses of Ipecacuanha in Dysentery ,without exciting vomiting. And the paper on the Effects of Blood-letting in the cold-stage of Intermittent Fevers.

The first of these contains a most lucid view of the Diseases of the Spleen, founded upon a careful examination of its anatomical structure and physiology ; and points out the great success which attends the treatment of these diseases, after vascular irritation has been allayed by the usual antiphlogistics, by exhibiting a combination of purgatives and tonics under the form

of the various spleen remedies now generally in use on this side of India. In this paper also, the author emphatically calls the attention of medical men to the horrors so frequently attending the employment of Mercury in these affections, where that remedy has been given as a visceral deobstruant, according to the plan recommended by almost all writers on the subject, even those of the present day.

This paper doubtless has saved many individuals from the frightful, perhaps fatal, sloughings of the mouth and mortification of the cheeks, which they would have otherwise been subjected to, if their medical attendants had followed the course which some of the highest authorities recommend them to adopt in the treatment of these diseases.

The paper upon the Use of Ipecacuanha in Dysentery, written in 1829, was the first published notice which the profession received of that admirable remedy, administered in the mode employed by Mr. Twining in the cure of dysenteric affections, with so much success. It has been objected to the high reputation which the author acquired from the successful introduction of this mode of treatment into modern practice in the East, that it is merely the revival of an ancient remedy long known in medicine; and that it was employed by others when Mr. Twining came into the country. Such objections are too often advanced by those whe are jealous of another succeeding where they have failed, and who are glad to employ every artifice in their power to diminish the credit of more fortunate or more deserving individuals. They clothe their envy under the pretence of a love of justice, and a de-

sire to prevent imposition. In the present instance it is peculiarly inapplicable ; for Mr. Twining never for a moment affected to claim for himself originality in proposing the employment of Ipecacuanha ; it would have been childish to do so, as every work published on Indian Diseases, within the last fifty years, mentions it, and such an absurd pretension would at once have been confuted. But though formerly a much vaunted remedy, Ipecacuanha had fallen comparatively into disuse for many years previously, having been almost entirely displaced, and succeeded, by the Calomel treatment. When Mr. Twining again sought its aid, he employed it only as an auxiliary to the bold antiphlogistic treatment with which he always commenced his management of dysentery. He then administered the drug in large doses, combined with a bitter extract, with a view, as he says, " to relieve the tenesmus and irritation, of restoring a healthy state of the alvine evacuations, and in more remote stages of the disease, of promoting the healing of intestinal ulcers ;" an object which it completely effected, as triumphantly shewn in the success which attended his own practice in this distressing malady, and the extent to which it has been adopted throughout this country. Whether or not, a few individuals may have used this remedy, when Mr. Twining wrote, is immaterial: no one had hitherto called the attention of medical men publicly to the advantages of its employment. The profession at large were entirely ignorant of its value, until Mr. Twining, having confirmed its importance by the success of his own practice, pointed out the superiority of that mode of treatment over the indiscriminate use of calomel and opium.

It was by his means alone that it was extensively diffused throughout India.

The introduction of such an improvement in the cure of one of the most painful and fatal diseases to which the residents in hot climates are exposed—an improvement by the employment of which, in addition to its other merits, the mode of treatment by salivation is almost entirely superseded—can be regarded as no trifling cause for eulogium on its author.

The same remarks are in a great measure applicable to the paper upon Spleen Diseases. The proposed remedies were not novel ones, many of them had been long before employed in practice by Mr. Shoulbred and others; but Mr. Twining was the first who published any account of them, and through him a knowledge of their value was generally diffused, and the superior advantages of their employment, widely spread through the country.

The practice of blood-letting in the cold stage of intermittent fever is another measure, which India owes to the exertions of Mr. Twining: for though previously employed in Scotland by Dr. Mackintosh, the subject of this Memoir was the first to introduce the practice into this country, and to recommend it to the notice of the profession, by the success which it met with in his hands. It has since been extensively employed by the Medical Service in all parts of India, and the Society's Transactions contain many communications upon the value of this remedy.

In obstinate cases of ague, which will yield to nothing else within the reach of our art, and in those patients whose peculiarity of constitution does not al-

low of quinine being administered to them with safety, in quantities sufficient to make any impression on the disease, doubtless much benefit may be expected from its employment. The advantage, moreover, of this mode of cure, in preventing the formation of those obstinate visceral enlargements so constantly attendant upon intermittent fever, is too well known to require any remark. Still it may be questionable, whether venesection is altogether so useful in these diseases as it has been represented; it is certainly unnecessary in the greater part of the agues to be met with in India. Where other means will avail, to say the least, the safer practice is, to dispense with this remedy: for the patient's constitution is usually weakened sufficiently by the attacks of the malady, and does not require any additional exhaustion; whilst of all depressing agents, blood-letting is without question the most powerful.

The publication of the above-mentioned papers was, however, but the prelude to a work on a far more extensive scale, in the preparation of which Mr. Twining was for some time engaged. In August, 1832, his admirable book upon the Diseases of Bengal was announced. The reputation which the author had previously attained, and the high respect already felt for his opinions, by his professional brethren throughout India, excited their expectations on the merits of the forthcoming work in a more than ordinary degree; they hailed its appearance with eagerness and delight: nor were they disappointed,—it contained all they had looked for, and was unanimously declared to be the most important treatise upon Indian diseases ever published.

It is full of the most invaluable matter, containing the soundest views of disease, founded upon that acute observation and profound knowledge of his profession which distinguished the author; and it is illustrated by an immense number of highly instructive cases. The rules of practice laid down are clear and simple, inculcating those bold and active measures which marked Mr. Twining's treatment of diseases; and where he mentions his own peculiar views, or points out his reasons for differing from his predecessors, he does so with a degree of modesty which is singularly pleasing, and which affords a most excellent lesson of humility to the self-sufficient and ignorant. It is no exaggerated or unmeasured praise to declare, that whether regarded in the light of a work of instruction to the young Surgeon, or as a book of reference to the more experienced practitioner, it is unequalled in the list of authorities upon tropical diseases in general, and is by far the most valuable text book which we possess upon the particular maladies of British India—a book the reputation and usefulness of which will not speedily be impaired or eclipsed.

Instructive as this work is in all respects, it is especially so upon one particular subject. The chapter on Fever is so valuable, and contains altogether such deeply important directions for the management of that disease, as it appears in this country, (directions to be found in no other work upon the same subject,) that it alone would have been sufficient to raise Mr. Twining's name to the high elevation which it has attained. As an illustration of this remark in the treatment of Remittent Fever, the employment of depletion is strenu-

ously insisted upon, as affording the surest check to the progress of that malady in all severe cases. It did not however escape the author's acute observation, that in fevers of this type it was a remedy, the value of which must depend entirely upon the exact period at which it is employed. Mr. Twining well knew, and has most clearly pointed out, that the loss of a few ounces of blood, or the passing of a copious stool, may be as fatal at sunrise, as beneficial at midnight, or even with an interval of much shorter duration; that indeed the lapse of a single hour may cause the application of a dozen leeches, to destroy the very patient, who might have been previously saved by the same measure. Other authors may have discovered this, and some experienced practitioners may have arrived at the same conclusion, by lessons which it would have been far better for their patients they had never learnt; but they have all been completely silent on the subject, deeply important as it is, and no one has thought it necessary to call the attention of the younger members of the profession to this point, so requisite for them to understand. It was left to Mr. Twining to shew the danger of neglecting this caution, and to lay down such clear and masterly directions for the management of depleting remedies in fever, that no man reading them need now go wrong, or if he does, it will be with his eyes open, and without the excuse of ignorance, which might formerly have been offered.

There can be no doubt but that the great discrepancy of opinion upon the value of venesection in severe tropical remittents, has arisen in a great measure from the fact that the proper moment for employing that invalu-

able remedy in these diseases, was not properly understood by the profession generally. Those who were fortunate enough to use it at the right period, saved their patients, and praised the practice accordingly; whilst, on the other hand, those who have deferred the use of the lancet for a few hours, and have at length employed it when the paroxysm has been about to recede, as signally failed, and the fatal consequences of their mismanagement and ignorance have induced them to proscribe it for ever, and write it down as inadmissible at all times.

The value too of Quinine, in checking the return of the paroxysm in remittent fevers, is most ably shewn in this work, and as yet in no other treatise upon these diseases. Indeed, till the appearance of this invaluable work, no situation could be more unenviable, than that of the young practitioner, when he first landed in India, and was placed in charge of those formidable cases of disease, which, from their intensity, and rapid progress, completely astound a person accustomed only to the slower and more insidious maladies of Europe.

Mr. Twining was a great advocate for the most active antiphlogistic treatment. In almost all Indian maladies, he bled largely, and used cathartics with great freedom. But not the least valuable part of his practice, was the great contempt in which he held the mercurialising plan, so much insisted upon by the generality of writers on tropical disorders. He gave calomel as a purgative largely, but he never could bring himself to see the necessity of salivating every unfortunate individual who was attacked with fever. In that class of diseases, he found other measures equally efficacious, and far more agreeable, in their immediate

and ultimate results. In Dysentery, the success which attended his admirable treatment, by copious depletion, and large doses of ipecacuanha, precluded all necessity for saturating the system with the scruple doses of calomel which were so much lauded a few years ago, and so invariably administered. Even in Hepatitis, he was heretical enough to prefer the lancet, and energetic depletion by leeches, and cathartics, to an indiscriminate use of salivation; and he was not accustomed to form a hasty judgment, nor one unsupported by the evidence of fact. One of his favorite topics of conversation, upon medical subjects, was the mischief of calomel, and he never lost any occasion for displaying his abhorrence of the abuse of that drug, which has crept so extensively into medical practice, within the tropics.

Mr. Twining was a warm anticontagionist in his views of Cholera, a subject to which he had paid much attention; and on the nature of which, as it appears in this country, he has thrown considerable light. In the treatment of this disease, he was at first a strong advocate for bleeding, and opium, with calomel; but latterly, he became more inclined to the employment of stimuli, and he used often to say he really believed, that when he trusted to the old fashioned remedy of Brandy and Laudanum, he was far more successful, than when he afterwards proceeded upon more scientific principles, and administered remedies of greater pretensions.

In 1833, he published, through his Book-sellers in England, a separate work upon Cholera, which was favorably received there.

Mr. Twining's fame and reputation were much encreased throughout all India, and extended even to

Europe, by the production of his work, " On the Diseases of Bengal." So impressed were the Members of the Supreme Government with its importance, that with great liberality they contributed fifteen hundred rupees towards the expence of its printing and publication. The first edition sold rapidly, and the author was soon forced to make preparations for bringing out a second, which fortunately for the public, and the medical profession, he was just able to complete, before he was snatched away from the extensive field of usefulness in which he was laboring. He bestowed a great deal of attention upon this, and corrected many little errors which were apparent in the former edition. He enlarged it, moreover, with many additional observations, and added several new chapters, for example, one upon Diarrhœa, a disease which he had omitted to notice previously, and two or three others upon the climate of Bengal, tropical hygeine and the habits of the natives, which very much increased the value and usefulness of the work. In June, 1835, it was published, and most warmly received by the public. The Government again came forward upon this occasion, and in a very handsome manner, marked their sense of the value of the author's labors by taking two hundred copies of the work, with the intention of distributing them throughout the Medical Service.

With the publication of this edition of his work, Mr. Twining's brilliant career was about to close. While his friends were congratulating him upon the success of his undertaking, prophesying to him future years of reputation and happiness, and saw his eye lighted up with the pleasure which the bright prospect afforded

him; they little anticipated that three short months would hardly elapse ere the chamber of death would cover all in its darkness, and that nothing would remain of him whom they regarded with so much love and veneration, except the fame of his talents.

It remains now only to relate the melancholy tale of the accident, and consequent illness, which deprived India of one of its brightest ornaments, and removed from amongst us a man whom it will indeed be difficult to replace.

On the 19th August last, as Mr. Twining was visiting his patients, his coachman drove against a Buggy, and overturned it; a gentleman who was in it was thrown violently on the ground, and his thigh was fractured. Mr. Twining instantly ran to assist the wounded man, and with the aid of a passenger, lifted him into a palanquin, that he might be sent to the General Hospital. In doing this, he felt something give way in his chest with a sudden snap, and he instantly became sick and faint. He went into the shop of Mr. Thomson the druggist, took some Tincture of Opium, and tried to lie down for a short while; but a strong feeling of suffocation which ensued the instant that he attempted to do so, caused him to rise immediately, and not feeling any better at the end of half an hour, he got into his carriage, and drove slowly home. On the way he took some more Laudanum, and continued very weak, and faint: his pulse was so small, quick and fluttering that Mr. McGowan, who accompanied him, was fearful that he would have expired on the way; indeed, he expressed the same fear himself.

His own opinion of his case was at that time very unfavorable, and as soon as he reached home, he sat down in a chair and began to arrange some papers, which he said he wished to do whilst he still had the power of collecting his thoughts, that all might be in readiness against the worst. He was perfectly calm and collected, but talking was very painful to him. He would not however allow Mr. McGowan, who was anxious to do so, to remain all night with him ; indeed the very proposal seemed to distress him. He did not sleep that night, the sense of suffocation not allowing him even to lie down. He expressed himself to be more comfortable, however, in the morning ; and in the course of the forenoon, after the action of a purgative, he was able to sleep for an hour or two in the recumbent posture, from which he was awakened by a tickling cough, that caused him to expectorate a small quantity of blood, and he continued to do so during that day, and part of the following. He slept a little that night, and the next morning was slightly relieved. He took two pills of calomel and blue pill every four hours, and in the afternoon, he put sixteen leeches upon the right hypochondriac region, which, though it weakened him somewhat, enabled him to breathe much easier, and talk with less fatigue. He remarked, he had no doubt, that from the infiltration which had taken place, a portion of one of his lungs very much resembled so much red currant jelly, and that he had it before his eyes at that very moment. On this day he actually got into his carriage, and went out to see a patient, about whom he was much interested ; and he did so again on the 23rd, without suffering much from an act of such apparent imprudence.

He passed a restless night on the 21st, and was much troubled with flatus and distension of the abdomen, though he had been considerably purged. In the afternoon, he expressed himself to be more comfortable than he had been at any time since the accident: his breathing was comparatively easy, though very rapid, and the flatulence was his principal annoyance.

On the 22nd, he had a wretched night, and his attendants stated that he had been delirious.

He had prescribed for himself up to this day, and to a great extent had concealed his situation from his friends; but in the afternoon he requested to see Mr. Egerton, who instantly came to him. That gentleman states, that when he arrived, he found him sitting up, writing a prescription. His pulse was too rapid to be counted; indeed it had been so throughout his illness. Mr. Egerton remonstrated with him upon the imprudence of a person in his circumstances transacting business, or placing himself in any situation, but one of the most perfect tranquillity; a direction the force of which he admitted, and he promised to be more tranquil in future. He suffered much from thirst, and drank frequently. At Mr. Egerton's suggestion, with a view to relieve this, he took four grains of calomel, and six of antimonial powder; a blister was applied to the scrobiculus cordis; and he agreed to take a dose of castor oil, and Turpentine, the next morning, at 5 o'clock, which was intended by its action to produce a diversion in favor of the lungs, as his breathing was at that time very laborious. But he altered his mind after Mr. Egerton had left him, and having determined, that his disease was an obscure

intermittent fever, he resolved to trust to Quinine; several doses of which he took. In the evening, he was in good spirits, confident of the result of his new mode of treatment: the pulse had improved, it was fuller and softer, and his skin had a more healthy feel; indeed, he was so much better, that Mr. Egerton, naturally feeling the utmost confidence in Mr. Twining's professional skill, began to think, that the latter had taken a more correct view of the nature of his case, than he himself, from his anxiety, and interest in the fate of his friend, could form. His pulse however even at that moment was two hundred and sixteen, and the respiration hurried in proportion. He passed a comparatively quiet night, sleeping full five hours at various times.

The pleasing anticipations excited by this temporary change were not destined to be realized. On Tuesday the 25th, at 5 A. M. he took a purgative, with some relief; but a decided change for the worse took place in the course of the morning: by one o'clock, the respiration was dreadfully hurried, and weak, and his pulse had once more become too rapid to be counted; yet he was perfectly sensible, and was occupied for some time in making his will. He continued to suffer frightfully from difficulty of breathing, once or twice exclaiming, that death itself was better than the agony he endured. About half past 3, on being asked how he was, he replied in a clear voice, "dying, dying; do what you can for me." At that time, his struggles for breath were most distressing. A few minutes afterwards, he requested to be turned upon his right side, and at 20 minutes before 4, respiration entirely ceased, the head and neck were dreadfully gorged with blood, and his sufferings were ended for ever.

Throughout the whole of his illness, he had been perfectly calm, and self-possessed, reasoning on his case with clearness and judgment. During the first two days, he took an unfavorable view of its termination; but afterwards, even up till Tuesday, within a few hours of his death, he was sanguine, and confident of recovery. He said that he had been as ill before, and had recovered; and he mentioned to Mr. Thacker, on Sunday, that his pulse would suddenly fall to 55, its natural state, as he said it had done upon a former occasion, and then he should get better. But he neglected no precaution against a fatal termination, arranging all his affairs with the utmost coolness and precision. The only thing which appeared to distress him, was the remembrance of his wife and child; of them he could never speak without the deepest emotion. He frequently recurred to this subject, expressing his great satisfaction, at the thought of the favorable circumstances, in which he should be able to place them by his will.

Unfortunately an examination of the body was not permitted, and the cause of his death must remain in some obscurity; for strange to say, a short time before his death, Mr. Twining had expressed a strong wish, that his friends would not allow him to be opened. Of course it would have been highly indelicate to his surviving relations to have acted in opposition to this request, though his medical attendants, were exceedingly anxious to ascertain the true condition of his chest.

The history of the case however would appear to point out the rupture of a large blood vessel, consequent upon some severe affection of the heart. He had for some time previous to his death labored under

symptoms which marked the existence of a disorder of that organ; and he had himself frequently expressed his conviction that such was the case. He distinctly stated to several of his friends during his illness, that his disease was Angina Pectoris; indeed he caused this opinion to be entered in his will. The suddenness and violent character of the attack, with the symptoms of suffocation, innumerable pulsations, the tumultuous action of the heart, and the intense frequency of the respirations, point out the bursting of the coronary arteries, or of one of the valves, or perhaps of some of the fibres of the heart itself, or even of the coats of some large vessel in the neighbourhood, as the most probable cause of death.

The rupture of a portion of the lungs was considered by some to have been the true pathological change; but the facility of lying upon one side, as well as on the other, militates against this view; besides which, there was scarcely any blood-spitting throughout the whole illness.

The difficulty of respiration is easily accounted for, by remembering how much the lungs must have been oppressed by the disturbed circulation, and how impossible it was for them, to keep up with the rapid action of the heart.

At the time of his death, Mr. Twining was about 45 years of age; he was of a middling stature, but his figure, though latterly inclining somewhat to corpulency, was remarkably strong and robust; indeed, he would often say, that nature intended him for a plough-man, when she gave him such muscular limbs, and that they were thrown away upon him as a doctor.

His countenance was intelligent, and thoughtful, but very mild, and there was a general expression of benevolence diffused over it, which was extremely prepossessing. In manner, he was very retiring and quiet, almost resembling a member of the Society of Friends in his appearance and deportment; exhibiting, at the same time, a great share of the kindness and warmth of heart which he naturally possessed. He was at all times singularly temperate and abstemious in his habits, a rigid water-drinker in example, as well as precept; and he regarded indulgences of the table of every kind, as unpardonable offences in a man, who wished to preserve his health, more especially in a hot climate.

Mr. Twining's whole character was marked by a large proportion of that benevolence which was stamped upon his countenance, and it was no where more conspicuous than in the unwearied kindness and attention, with which he regarded the sick of all ranks and descriptions, who were placed under his care. This feature of his character was not less strongly developed in the relations of private life. He was a most warm and sincere friend, and was delighted to have any opportunity by which he could serve those around him. In him his friends were never at a loss for council, or assistance; he gave both most freely, and when he thought it would be of service, he did not require to be solicited for either; though always offered on his part with a delicacy which could not offend the most sensitive mind.

None felt the effects of his kindly disposition more strongly than the Assistant Surgeons who were placed in contact with him in the General Hospital, on their

first arrival in the country. He delighted to point out to them all that was interesting and important in their profession, and the benefit of his instructions will not easily be forgotten by those who have experienced them. While his talents commanded their deepest respect, he treated them with a degree of personal attention, in some instance approaching to paternal kindness, which at once won their attachment, and created in their hearts a feeling of regard for him, which was equally creditable to the pupils and to their instructor.

In domestic life, he was most affectionate; indeed it formed for him the greatest attraction in life. To a man of his studious and industrious habits, the gaieties of society had no charms; even had his professional avocations permitted him sufficient leisure to mix in the world, he would have preferred at all times to enjoy the tranquil pleasures of home and his books, enlivened by the intercourse of a few intimate friends, to all the joys which a gayer life could offer him.

He intended to have retired from the service as soon as he was entitled to the pension of surgeon, which would have occurred in 1841. From the profitable nature of his practice, in spite of some severe losses by the late mercantile failures, he would by that time have been possessed of a very handsome amount of property: but he always spoke of resuming his professional employment in London as an amusement; for he said, that he could not bear to be idle, were he ever so rich: his profession had become his very life. Never perhaps was any man more devoted to it and absorbed by it, to the exclusion of almost every other pursuit.

Mr. Twining's amiable qualities, did not prevent him from possessing a remarkable degree of firmness and decision. His judgment too was very sound, and though not obstinate, he did not readily yield to another opinion, when he had once made up his mind upon any subject.

As a writer, Mr. Twining was clear, forcible, and unpretending. He wrote nothing for effect; all that he said was the result of experience and mature reflection, illustrated by a copious reference to the facts from which he had formed his opinions; so that his readers had an equal opportunity with himself of judging of their value. His observations were well arranged, the mode of reasoning fair, and very accurate; and his deductions stated with simplicity, and great modesty. His practical directions were exceedingly clear and intelligible. He never indulged in the vague though often ingenious speculations and groundless theories which scientific men of all classes are too apt to fall into; such a proceeding would have been entirely opposed to the general character of his mind, which, far from being imaginative or credulous, was strongly marked by a love of patient investigation, and a careful examination and comparison of facts, without which he would take nothing for granted.

His style of composition was plain and concise, without any attempt at ornament, or fine writing; but far from being clumsy, dull, or constrained. It was indeed impossible to rise from the perusal of any of Mr. Twining's works, without being firmly possessed by a conviction of the superior mind and extensive knowledge of the author, and a deep sense of respect for his qualifications.

The mournful impression caused by Mr. Twining's decease was universal. He was so well known, so much beloved by many, and so highly valued by all, that the death of no one individual in the country could have created more profound grief, or produced a sensation of more public sympathy; and it is a melancholy consolation to witness the efforts which have been made to do honor to his memory, and pay the last token of regard which his friends are capable of shewing.

His funeral was attended by a very large portion of the inhabitants of Calcutta, even by many who were personally strangers to him. Public meetings were held by his patients and friends to consider the best mode of commemorating their deep sorrow for his loss, and their regard for his memory. A large sum of money has been subscribed by them to erect a monument to his memory in the Cathedral, and to purchase some token of their feelings which may be sent to his sorrowing family in Europe.

On the evening of the next meeting of the Medical Society subsequent to his death, the 5th September, after the usual miscellaneous business of the evening had been concluded, the Secretary (Mr. Hutchinson), having obtained permission of the President, proceeded to address the meeting to the following effect:

"Mr. President, In begging your permission to postpone proceeding further with the regular business of the evening, I know that I am acting in accordance with the wishes of a great part, if not of the whole, of the gentlemen composing this assembly. There is no one among us, I believe, who is ignorant of the great loss which this Society has sustained since its last

meeting, by the death of one of its brightest ornaments, and most indefatigable supporters ; I need not say that I allude to the late Mr. Twining. In rising to propose that this melancholy event should not be permitted to pass unnoticed, I know that no apology is necessary ; unless indeed it be, for the imperfect and unsatisfactory manner in which I may execute the duty which I have undertaken. I will not say reluctantly, for, although I deeply lament my own inability to do justice to the subject, I confess I cannot feel otherwise than grateful to those who have afforded me this opportunity of endeavouring to do honor to the memory of one, for whom I entertained the most sincere esteem and regard.

"I need not attempt, gentlemen, to trace an outline of the professional career of the late Mr. Twining : that duty will no doubt be performed by abler hands than mine. I shall therefore content myself with stating, that after serving his country honorably, both in the Peninsula, and on the continent of Europe, during the greatest part of one of the most gigantic and protracted struggles with a foreign enemy, in which England ever was engaged, the subject of this notice came among us, to share our fortunes, now a little more than eleven years ago. The Indian portion of the career of the late Mr. Twining, as it embraced the period of the full maturity of his powers, was still more distinguished than that which had preceded it. His thorough knowledge of his profession, his great sagacity, and his unremitting attention rapidly secured for him an extensive, and valuable medical practice. This success, however highly deserved and flattering as

it was, did not constitute with us his greatest merit; that it had its share cannot be denied; for while it led us to respect and look up to him, the urbanity of his manners, and the affability of his address insensibly secured our permanent attachment. That the community of Calcutta have had able medical practitioners among them, that they have them now, and that they will have them hereafter, cannot be denied; in this respect his loss may possibly be replaced: but gentlemen, my heart misgives me, when I endeavour to indulge the hope, that this Society can ever find another Twining. To be what he was, how many high mental endowments, and how many of the more amiable qualities of the heart are necessary. To natural talents of a high order, Mr. Twining united an ardent love of his profession, and a spirit that led him to look to far higher objects than mere lucre, in the practice of it. In that assuredly he did well; for now that gold can no longer be of service to him, the monument to his genius, which he has left behind him in his writings, besides its eminent utility to his fellow-creatures, will go far to secure for his name an immortality among the more distinguished medical writers of his country. In addition to these mental endowments, Mr. Twining possessed a powerful, cool, and dispassionate judgment, which enabled him to cast from him as weeds, the most alluring speculations, if unsupported by sufficient premises; and consequently, eminently qualified him for conducting investigations into the mysteries of disease. Nor was his attention confined to these pursuits; but was extended to those branches of knowledge which are collaterally connected with medicine, and

which may be termed her sister sciences or handmaids.

"When I mention, gentlemen, that these talents and acquirements were combined with habits of industry, nay, even of the most laborious application to whatever promised to increase his professional knowledge, or to extend his reputation, it will be allowed at once, that the individual so gifted could scarcely fail of commanding success, and so the result eminently showed.

"Such, gentlemen, are a few of the qualities which the late Mr. Twining possessed; but there were others, which in a more especial manner endeared him to this Society. To an unremitting love of professional research in himself, he united the power still more useful, if possible, of inspiring others with a portion of his zeal; to him accordingly we are indebted, not only for a series of the most masterly contributions that ever have been made to Indian medical science, which he himself laid before us, but for many other communications, which he was the means of encouraging other members of the profession to submit to our judgment. To him we are indebted for an interest in this Society, which, I believe, led him to be present at every one of its meetings, at which he could possibly have attended, during the whole of his Indian career: to him we are indebted for an interest in its welfare, that led him for many years of his life to devote to its affairs the greater portion of the little leisure which he had, and which was to him so valuable; and to him we are indebted for a liberality of sentiment, that led him freely to communicate to every member of it from his ample stock of knowledge. But, gentlemen, the catalogue of

our obligations to him might be extended almost to an indefinite extent; I shall in consequence refrain from dwelling farther on the subject. Where, however, let me ask, shall we now find the cautious and experienced Physician to conduct our trials of new remedies; and where, oh where shall our young professional brethren find so kind, and so able an instructor, to initiate them into the peculiarities of Indian medical practice? Fortunately his successors in office are men of high talent, who will no doubt eagerly endeavour to emulate his virtues.

"I have been long enough in India, gentlemen, to remember the first institution of this Society, and likewise to remember what our service was, before that event; and I do not hesitate to say, that in my opinion this Society has done more to promote medical research in India, and consequently to elevate the professional character of our department, than could have been believed or even imagined by the most sanguine of its institutors. For a great portion of that improvement we are indebted to my predecessor, the late Mr. Adam, to whose learning, and to whose virtues no tongue could do more than adequate justice; for an equal, if not a larger share we are indebted to the late Mr. Twining, though it was neither in his character to be vain, nor boastful; he had a just sense of the value of this Society, and knowing that, he could not do otherwise than wish that it should receive the most extensive support.

"I was in hopes, gentlemen, when we last met, that I should have been able to read to you this evening, a contribution, I need not say a valuable one, by Mr.

Twining; alas! I little thought at that time that it would prove to be a posthumous one; it will now come to us a valued and esteemed legacy from our departed friend. Though there is every probability that it will be recovered, I have not yet recovered it: but the delay can be of little consequence; for I believe, there is no one among us, at this moment, who could listen to it, or to any production of the late Mr. Twining's, but with feelings of the most painful emotion. For my own part, so recent is our melancholy loss, and so accustomed was I to meet him in this place, that I can scarcely help casting my eyes around this table, in hopes of once more recognizing his well-known features.

"But enough of this; let us cease to deplore our own losses, for he requires not our commiseration. Let us console ourselves with the reflection, that he died in the full possession of his faculties; that those who were dearest to him have been left in affluence by his own meritorious exertions; that he met his fate in a mode, which of all others may be considered honorable for a member of our profession,—in the performance of an act of humanity to a person who required his assistance: and lastly, that all ranks of society have been actuated but by one desire on the occasion, and that is to do honor to his memory:—and shall we then, gentlemen, who principally benefitted by his society, and some of us by his friendship, shall we be behind others in testifying our respect, our regard, our little less than veneration for his memory? I will not do myself, far less you, the injustice to harbour this suspicion; I shall therefore conclude by proposing, that besides other tributes which will be submitted

for your consideration, a biographical Memoir of the late Mr. Twining be drawn up under the superintendence of the Committee of Papers, and prefixed to the volume of the Society's Transactions now passing through the press."

This resolution, having been seconded by Dr. Mellis, was carried unanimously. During the course of the evening, many gentlemen, among whom were the President, Dr. Langstaff, Dr. Mellis, Dr. Corbyn, Dr. Garden, Mr. Egerton, Mr. Bramley, Dr. Goodeve, and others, expressed in feeling and appropriate terms the high esteem in which they held the late Mr. Twining.

It was then proposed by Mr. Hutchinson, and seconded by Mr. Bramley, that the Medical and Physical Society do now adjourn to the first Saturday in October next, at the usual place and hour.

This resolution was unanimously agreed to, and the meeting of the Medical and Physical Society was accordingly declared to be dissolved.

The gentlemen who were present at the Medical Society having remained in the room, the following resolutions were moved and adopted:

First Resolution, moved by Dr. Langstaff, and seconded by Mr. Egerton;

Resolved, That such gentlemen now present, as may be desirous of testifying their sense of the public and private worth of the late Mr. Twining, be requested to remain and form themselves into a meeting of the Medical profession, for the purpose of considering and deciding on the most suitable mark of respect to pay to the memory of that highly esteemed individual.

J. Langstaff, Esq. having been voted to the chair,

The second Resolution was moved by Mr. Egerton, and seconded by Dr. Mellis;

Resolved, That while this meeting is of opinion, that the Medical and Physical Society of Calcutta has done much to elevate the character of the Medical Service throughout India, by encouraging and promoting a love of Medical research, it is impressed with the conviction, that to no individual is that Society more indebted than to the late Mr. Twining, not only for the valuable contributions, which from time to time he made to its Transactions, but for the active and unremitting interest which from first to last he continued to take in its proceedings and welfare; and that it is accordingly fitting, and no doubt the desire of by far the greater number of the Members of the Society, and of the Medical Profession in India, generally, to mark individually the sense they entertain of his services, of his high professional attainments, and of the unassuming private worth, which rendered him ever ready to communicate with cheerfulness to others the result of his great experience.

Third Resolution, moved by Mr. Bramley, and seconded by Dr. Ranken;

Resolved, That with the view of carrying the two foregoing Resolutions into effect, a subscription list be submitted to every member of the profession in India, for the purpose of collecting funds, wherewith to defray the expense of such tribute to the memory of the deceased, as may be determined on.

Fourth Resolution, moved by Dr. Garden, and seconded by Dr. Goodeve;

Resolved, That with the funds so collected, a Monument, bearing a suitable inscription, be erected over the grave of the late Mr. Twining; and with any surplus which may remain, a portrait, if possible, be procured, and placed in the apartments of the Medical and Physical Society.

Fifth Resolution, moved by Mr. Chapman, and seconded by Dr. Spens;

Resolved, That the following gentlemen be requested to form a Committee, for the purpose of carrying into effect the foregoing Resolutions, viz. Messrs. Langstaff, Garden, Strong, Hutchinson, Thacker, Egerton, Bramley, and Goodeve.

Sixth Resolution, moved by Mr. Bramley, and seconded by Dr. Goodeve;

Resolved, That Mr. Hutchinson be appointed Secretary to the Committee.

Calcutta, 1836.

In pursuance of the above resolutions, a Subscription list was submitted to the Members of the Medical profession in India, and a sufficient amount of funds having been received, a monument was erected over Mr. Twining's grave in the Chowringhee Burying-ground, bearing the following inscription:

To the memory of

WILLIAM TWINING, Esq.

MEMBER OF THE ROYAL COLLEGE OF SURGEONS IN LONDON,

SURGEON IN THE SERVICE OF THE HON'BLE E. I. COMPY.
ON THEIR BENGAL ESTABLISHMENT,

FIRST PERMANENT ASSISTANT SURGEON TO THE PRESIDENCY
GENERAL HOSPITAL,

AND

SECRETARY TO THE MEDICAL AND PHYSICAL SOCIETY OF
CALCUTTA,

This Monument is Erected,

BY HIS PROFESSIONAL BRETHREN IN INDIA,

TO MARK THE HIGH SENSE

WHICH THEY ENTERTAINED OF HIS CHARACTER,

AND OF THE EMINENT SERVICES

WHICH HE RENDERED IN THE CAUSE

OF MEDICAL IMPROVEMENT AND RESEARCH,

IN THAT COUNTRY.

Born at ———————— *A. D.* 179—.

Died at Calcutta 25th August, 1835.

AGED 45 YEARS.

ON

THE FAMILY OF RHIZOPHOREÆ.

By WILLIAM GRIFFITH, Esq.

Madras Medical Service.

Presented June 6, 1835.

The first peculiarity I shall mention relates to the anthers, and appears to have been first noticed by Jacquin, in his Historia Selectarum Stirpium Americanarum, p. 142, and subsequently by the illustrious Dr. Brown, who adverts to it in his matchless account of Rafflesia, (Linn. Trans. vol. 13, part 1, p. 214) in these words: "In other cases, a separation of determinate portions of the membrane takes place, either the whole length of the theca, as in Hamamelideæ and Berberideæ; or corresponding with its subdivisions, as in several Laurinæ; or lastly, having no obvious relation to internal structure, as in certain species of Rhizophora." I was acquainted with this structure for the first time about three months ago; and was then totally unaware that it was known to Dr. Brown. The first mention I saw of it was in Professor Lindley's Introduction to Botany, in which the above quotation is cited,

p. 128. As this structure appears to be confined to the genus Rhizophora, (that is, as I limit it,) it probably has some relation to internal structure. I have met with it in Rhizophora macrorrhiza, and from the examination of young anthers, presume it to exist in Rhizophora Candelaria.

The anthers of these are nearly sessile, of considerable size, and compressed laterally, especially those of R. Candelaria. Their narrowest edges are internal and external; or, in other words, situated anticously and posticously with respect to the axis. On examining their external surface more closely, we perceive numerous roundish opaque bodies crowded together, and apparently imbedded in their substance, and towards their internal edge a depressed line running obliquely upwards and inwards. This line is of small extent in R. Candelaria; in R. macrorrhiza it reaches nearly to the apex of the anther. If we make a transverse section at this stage, which, I should mention, is a short time before the expansion of the flower, we find that the body of the anther is cellular; the cells towards the centre being much the largest and most distinct. Around the periphery a considerable number of small sacs exist. These are entirely closed, more or less ovate, and disposed without any obvious regularity. They are at this period filled with somewhat immature pollen. They are of considerable depth, and perfectly free from mutual communication. In R. Candelaria no sacs appear to be developed along the outer or anticous edge;

in R. macrorrhiza, they are developed around the whole periphery. They are however smaller and more compressed along the above edge than elsewhere. The circumferential tissue, or cuticle, as it may be called, is perfectly continuous with the margins of the sacs, and with the tissue interposed between them. In R. macrorrhiza, just before the expansion of the flower, this tissue or cuticle will be found to have separated along the oblique line mentioned above, and from the body of the anther. Two valves are thus formed, which, however, necessarily remain in their original situation. After the expansion of the flower, the inner valve, which is the smaller of the two, separates from its base upwards, and becomes inclined inwards. The outer is curved outwards, and remains attached both by its immediate base and apex.

The body of the anther now presents an alveolar appearance, the alveoli being more or less filled with pollen. Traces of the original continuity of tissue remain adhering to the margins of the alveoli, as well as to those of the depressions visible on the inner surface of the valves, and which previously formed the lids of the alveoli, or rather closed them in. There is no peculiarity of structure in the pollen connected with this singular and anomalous form of anther, which seems to be allied to that of Viscum, so far as may be judged from the representation given in A. L. De Jussieu's Memoir on Caprifoliaceæ and Loranthaceæ, Annales du Museum, tom. 12, pl. 27. fig. E.

The direction of the valves of the anthers may be explained by assuming, that the thecæ, which they may be said to assist in forming, are anterior and posterior, in which case each valve will be single. This assumption, however, appears to me to be contrary to all analogy, nor am I acquainted with an instance of such a disposition. Or, we may take the type of an anther, as Dr. Brown has stated, to consist "of two parallel folliculi or thecæ, fixed by their whole length to the margins of a compressed filament;" the parallelism being transverse. In this view of the case, the valves will be compound; that is, each will be formed of half a valve taken from the right side, and half from the left: the line of union of the two halves being the line of separation in other cases. I do not know of any such absolutely analogous form of anther; but analogous examples of dehiscence occur frequently in fruits, forming that variety known by the name of *dehiscentia loculicida*. A similar position of the valves might result from a twisting of the filament; but this does not appear to take place in the present instances. The developement of the pollen will necessarily present some peculiarities, but the great paucity of materials has prevented me from following it up.

The mature cotyledons in Rhizophora, Kandelia, and Bruguiera decandra are consolidated, and form a mass which, towards the base (where it is articulated with the collet), is cylindrical and hollow, towards the apex fleshy and coriaceous;

the upper half of this part being generally somewhat constricted, and surrounded by fungous tissue. This tissue appears to originate in the coats of the ovulum, which at some period become detached and pushed towards the bottom of the pericarpial cavity. In these the plumula is lodged in the hollow of the cylinder. Corresponding with this structure, the ovarium is only $\frac{1}{4}$- or $\frac{1}{2}$-inferior, the upper part of the coriaceous capsule being, as it were, exserted*.

In Bruguiera parviflora (Wight and Arnott), and probably in all the genuine species of this genus, the cotyledons are distinct, fleshy, and plano-convex; they are not articulated with the collet. They are besides enclosed in their original integuments, these being only open at the point of exit of the radicle. In these two, the capsule is almost wholly inferior, and entirely enclosed within the calyx. The plumula in B. parviflora is lodged between the cotyledons, and surrounded with a transparent mucilaginous fluid.

The mature radicles consist of a central and peripherical system, the tissues of which, although continuous, present an obvious line of demarcation. The chief bulk is cellular, the cells

* Both Jacquin and Gærtner have mistaken the structure of the fruit of Rhizophora. The consolidated cotyledons form the "crus" of Jacquin, and the "vitellus" of Gærtner; and the displaced integuments are the "albumen" of Gærtner, and the "calyptra" of Jacquin. According to this author the seed is limited to the radicle and plumula, while the cotyledons of Gærtner are the outer portions of the plumula.

abounding in amylaceous matter. The proportion of woody fibre varies extremely; in Rhizophora Candelaria and macrorrhiza, it occurs throughout the central system, and is excessively fine; in Bruguiera decandra the proportion of fibre is exceedingly small, and confined to the circumference of the central system; in Kandelia this tissue is very dense, and exists only towards the apex of the same system, and has no communication with the collet. The proportion of vessels is in the roots of some species exceedingly small, in others they appear to be altogether wanting. I may add, that the central system subsequently becomes the wood; the central cells, at least in Bruguiera parviflora, remaining unoccupied, and forming the medulla.

With respect to the exsertion or lifting up of the axis (soulèvement), I may remark, that to all appearance it occurs in the genus Rhizophora, and is carried to its greatest extent, perhaps, in R. macrorrhiza. It is not difficult to conceive this effect, when we take into consideration the number of roots that descend from the branches to the ground. These must, during their growth, meet with considerable resistance at both extremities. The arched form which they invariably assume, after penetration into the earth (the convexity looking upwards), is a necessary consequence of that resistance.

The Linnean Genus Rhizophora appears to contain the types of three genera. The celebrated De Candolle, however, keeps it entire.

I may remark, that in an order the genuine constituents of which have, with one exception, definite stamina, their constant indefinity in that instance, may, I should imagine, be relied on as a valid character; Kandelia seems therefore, and on account of the structure of the petals, a good genus: and is adopted by Messrs. Wight and Arnott in their valuable Prodromus Floræ Peninsulæ Indiæ Orientalis. Bruguiera is not quite so satisfactory; since B. decandra, Roxburgh's Rhizophora decandra, the figure of which in his collection of coloured drawings belonging to the Honorable Company's Botanic Garden at Calcutta is excellent, has the flower of Bruguiera and the fruit of Rhizophora.

I shall conclude with a synopsis of the Rhizophoreæ which I have met with on the coasts of the Tenasserim Provinces, between the parallels of 16°, 30' and 12°, north latitude.

Rhizophoreæ, R. Brown Gen. Remarks in Appendix to Flinders's Voyage, vol. 2. p. 549.

1. Rhizophora Linn. (ex parte). Dec. Prodr. vol. 3, p. 31, (ex parte). Wight and Arnott, Prodr. Floræ Penins. Indiæ Orientalis, vol. 1. p. 310.

I may here remark, that if the peculiar structure of the anthers be confined to this genus, it will prove a valuable addition to the generic character.—It appears to me, that two very distinct species have been confounded under R. Candelaria; these I propose to characterise as follows:

1. R. Candelaria (Dec.) foliis ovalibus mucronato-cuspidatis, pedunculis petiolo brevioribus

sæpius 2-floris, floribus 9—12-andris, fructibus subulato-clavatis nutantibus, Dec. loc. cit. p. 32. Wight and Arnott, loc. cit. p. 310. Pee Candel Rheed, Mal. vol. 6. p. 61, t. 34. Mangium Candelarium, Rumph. Amb. vol. 3. p. 108, t. 71, 72.

Hab. add littora limosa maris et æstuariorum oræ Tenasserim, ubique. Floret Aprili, Maio.

Arbuscula coronâ latâ fere hemisphæricâ. Flores albi. Petala angusta, sublævia, per æstivationem stamina non amplectentia. Stamina sæpissime 12, quorum 2 sepalo cuique, 1 petalo cuique opposita. Radicula (exserta) 1-,1½-pedalis.

2. R. macrorrhiza, *mihi*, foliis ovali-ellipticis mucronato-cuspidatis, cymis nutantibus dichotomis petiolos excedentibus, floribus 8-andris, fructibus subulato-clavatis pendulis. R. Mangle. Roxb. Fl. Indica, vol. 2. p. 459. Ejusdem icones pictæ in Horto Bot. Calcuttensi asservatæ, vol. 8, t. 115, bona.

Hab. secus littora limosa maris circa Mergui, oræ Tenasserim, copiose. Floret Aprili, Maio.

Arbor 25-pedalis, coronâ parvâ. Flores semper octandri, suaviter odorati. Petala alba, conduplicata, marginibus villosis. Stamina 4 sepalis, 4 petalis opposita et his per æstivationem amplexa. Radicula (exserta) maxima, 2½-pedalis, subverrucosa.

This appears to differ from R. Mangle of Linneus, a native of the western hemisphere, in the form of the leaves. The h bit of these two species is very distinct, as is likewise the form of their anthers. The fact of the fruit of R. ma-

crorrhiza being pendulous, results of course from the greater length of the peduncle. This in R. Candelaria is so short, that the germinating fruit, which is at first erect, subsequently becomes curved downwards by its own weight.

II. Kandelia. Wight and Arnott.

Rhizophora § Kandelia. Dec.

The character of the ovarium, as given by Wight and Arnott, is at variance with the usual structure of the order, and with my own observations. I have found it to have the ordinary structure.

K. Rheedei. Wight and Arnott. loc. cit. p. 311. Tsjerou Kandel. Rheede. loc. cit. p. 63. t. 35. Rhizophora Kandel (Linn.) Dec. loc. cit. p. 32.

Hab. ad ripas limosas fluminum oræ Tenasserim, præcipue ostia versus. Floret Septembre, Octobre.

III. Bruguiera. Lam.

* Floribus 8-petalis.

1 B. cylindrica (W. and A.) foliis lanceolato-obovatis subacutis, pedunculis 1—3-floris petiolis paullo brevioribus, calycis fructûs laciniis patenti-reflexis, fructibus cylindraceis acutiusculis.

B. cylindrica. Wight and Arnott. loc. cit. p. 311. Rhizophora cylindrica, (Linn.) Dec. loc. cit. p. 32. Kanil-Kandel. Rheed. loc. cit. p. 59. t. 33.

Hab. secus littora limosa Insulæ Pulo Gyoon et Madamacan, rarius ; florens Novembre.

Arbuscula. Flores viridescentes. Calycis laciniæ lineares. Petala albida, apicibus ciliato-pinnatifidis. Fructus penduli 5—6-unciales.

Rheede's figure corresponds tolerably well with my plant, which is distinct from Roxburgh's Rhizophora parviflora.

2. B. parviflora. (W. and A.) foliis lanceolatis vel lanceolato-ovatis obtusiusculis, pedunculis petiolorum longitudine dichotome 3-floris, calycis fructûs laciniis erectis, fructibus obtusis.

B. parviflora. Wight and Arnott. loc. cit. p. 311 (sine charactere). Rhizophora parviflora. Roxb. loc. cit. p. 461. Ejusdem Icones pictæ Suppl. vol. 2. t. 4.

Hab. inter alias Rhizophoreas in Insula parva, anglice Madamacan dicta, Mergui proxima. Floret fructusque profert ab Octobre usque ad Martium.

Arbuscula elegans. Flores viridi-lutescentes, sub-odorati. Calycis tubus elongatus, subfusiformis. Petala lutescentia, ciliata. Fructus subcylindrici, 4—5-unciales, penduli, apicibus quasi truncati et medio foveolati.

* * Floribus 10—13-petalis.

B. gymnorrhiza. (Lam.) Wight and Arnott. loc. cit. p. 311. Kandel. Rheede. loc. cit. p. 57. t. 51, optima, t. 52. mala. Mangium celsum. Rumph. Amb. 3. p. 102. t. 68. mala. Rhizophora gymnorrhiza, (Linn.) Roxb. loc. cit. p. 460. Ejusdem icones pictæ vol. 8. t. 114.

Hab. ad littora limosa oræ Tenasserim ; florens per totum annum.

* * * Species inter Rhizophoram et Bruguieram media.

B. decandra. *mihi*, foliis obovatis obtusissimis,

floribus dense capitulatis, calycibus 5-partitis, fructibus clavatis sulcatis.

Rhizophora decandra. Roxb. Flor. Ind. Synopsis. Ms. Ejusdem Icones, vol. 8. t. 116, optima. Dec. loc. cit. p. 33.

Hab. ad littora limosa oræ Tenasserim, ad Martaban et Mergui. Floret per menses calidos.

Frutex sæpius humilis. Flores viridescenti-albidi. Petala alba (demum coriacea et brunnescentia), conduplicata, apicibus inciso-laciniata. Stamina petalorum numero dupla, 2 petalo cuique opposita et per æstivationem eodem amplexa. Antheræ biloculares. Calyx fructûs semi-inferus, coriaceus; laciniis patentibus. Fructus erectus vel nutans. Radicula (exserta) 5—6-uncialis.

Species flore Bruguieræ, fructu Rhizophoræ.

IV. Carallia, Roxb.

C. lucida. Roxb. Cor. Pl. vol. 3. t. 211. Ejusdem icones pictæ vol. 9, t. 19. mala. Fl. Indica, vol. 2. p. 481. Wight and Arnott, loc. cit. p. 312.

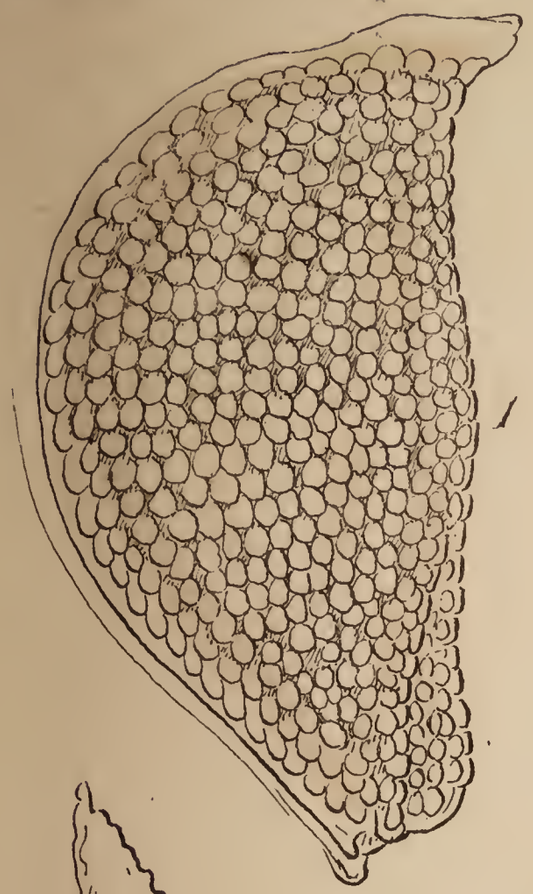
Hab. in humidis oræ Tenasserim ad Moalmain et Mergui. Floret Decembre.

Arbor humilis, ramulis compressis. Folia ovata vel oblongo-ovata, crenulata, interdum integra, coriacea. Cymi axillares, oppositi, dichotomi, foliis breviores. Flores dense aggregati, viridescenti-albidi, odoris forte ingrati. Petala alba. Stamina petalorum numero dupla, alterna petalis opposita et per æstivationem iisdem amplexa. Antheræ biloculares, longitudinaliter dehiscentes. Ovarium 4-loculare, loculis 2-ovulatis. Stylus filiformis;

stigma 4-lobum. Ovula pendula. Tegumenta bina distincta. Foramen superum hilum prope.

Explanation of the figures.

1. Young anther of Rhizophora Candelaria.
2. Ditto ditto of R. macrorrhiza.
3. Transverse section of ditto of R. Candelaria.
3. Anther of R. macrorrhiza about the time of expansion of the flower.
4. Ditto ditto the valves detached.
5. Ditto after expansion, the valves nearly in situ.
6. Pollen of R. macrorrhiza.



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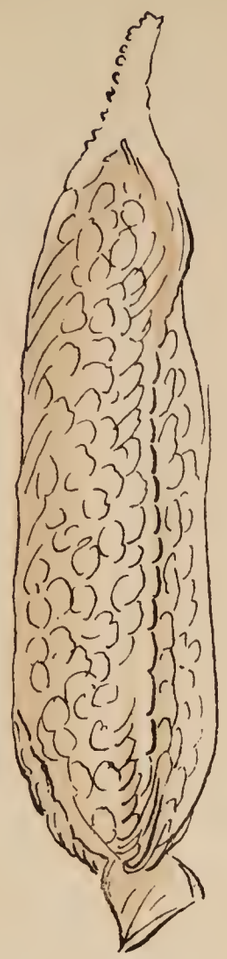

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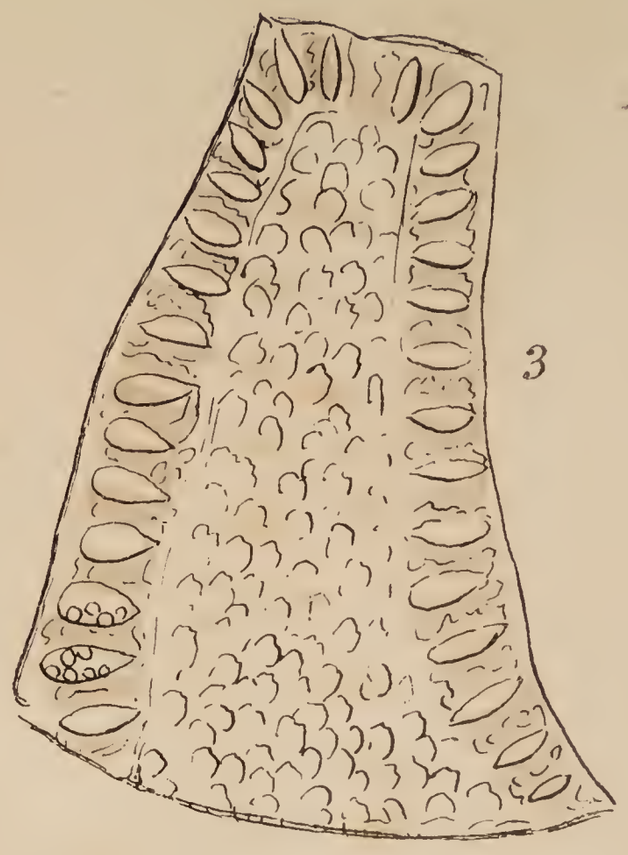

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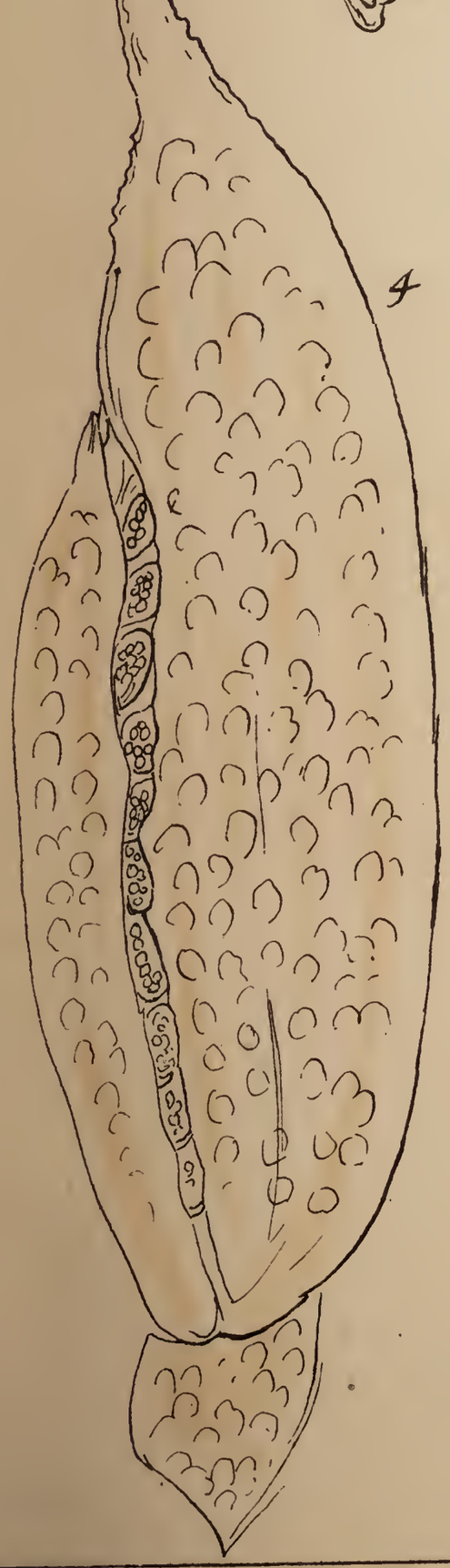

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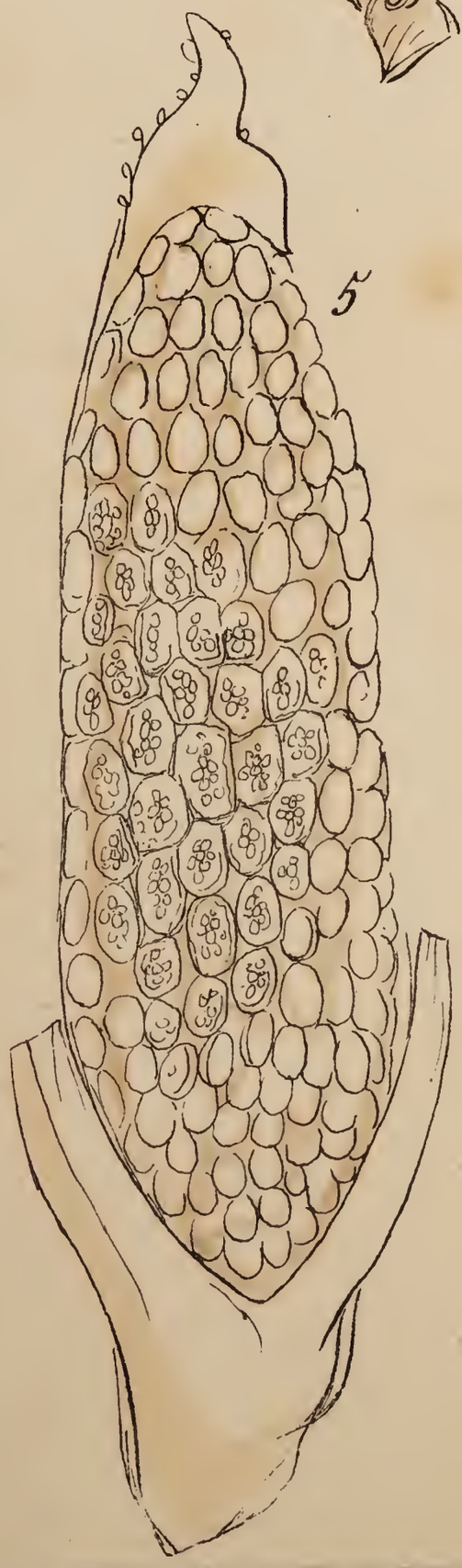

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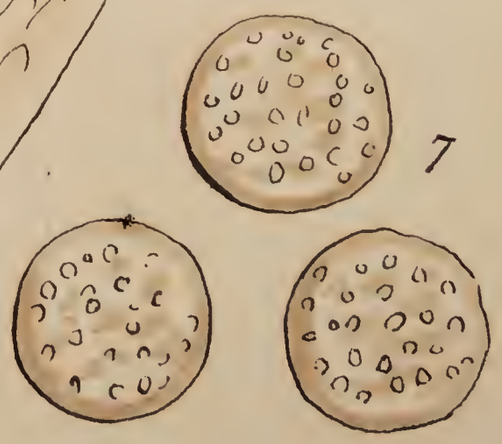

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J.B. Tassin lith

CASE OF RANULA,

IN WHICH

THE LEFT SUBMAXILLARY GLAND WAS EXTIRPATED;

WITH

REMARKS,

BY J. G. MALCOLMSON, ESQ.

ASSISTANT SURGEON, MADRAS ESTABLISHMENT.

Presented July 4, 1835.

IN the present improved state of surgery, a single case, illustrating any point, in the nature and treatment of a disease not yet fully understood, deserves publicity; and believing the following to be one which does so, I venture to submit it to the Society.

In the *Lancet*, for the 23rd February, 1833, there is a report of a lecture by Dupuytren, on Ranula, and its treatment by a new operation, in which, after pointing out the inadequacy of the modes formerly in use, he says, that extirpation has been dreamt of, but its performance has not been attempted. "The dread of injuring the essential blood vessels and nerves has prevented the attempt. But what end would such an operation propose? If the tumor were only removed, a difficult and delicate operation would be performed, without the certainty of preventing the return of

the disease. It would be necessary then to include the glands themselves. We do not think that such an operation ought to be attempted." In the following case, the gland was extirpated with success, and it will appear, that any other method, including that proposed by the Baron, could not have succeeded; although it may still be doubtful, whether the disease is of sufficient importance, even in the aggravated form in which it occurred in my patient, to justify an operation considered to be so formidable.

In the beginning of 1828, a sickly-looking Hindoo boy, nine years of age, was brought to Chicacole from an unhealthy hill district, on account of a swelling which extended from one ear to the other, over the angles of the jaw and to the sternum, near which it was more distended than above, and slightly pendulous, so as to admit of being raised from the skin covering the superior extremity of the bone; it was quite soft, and evidently contained a fluid. The disease commenced about a year before, below the jaw and a little to the left of the chin, and had gradually increased downwards, and up to the ears. The patient stated, that for some time before the appearance of the tumor, there had been a discharge of pus half an inch behind, and laterad of the mouth of the duct of the left submaxillary gland, where there was a depressed cicatrix, about a line in diameter, on the formation of which the swelling commenced. Near the cicatrix, there was a carious tooth. A very slight discharge of saliva from the left

submaxillary duct could still be observed. There was no swelling in the mouth; but a hardness could be felt below the jaw, a little to the left side, and there were several scars in the centre of the swelling, caused by repeated applications of the actual cautery.

I concluded from these facts, that the submaxillary ducts or gland having been inflamed, probably from the irritation of the diseased tooth, the passage of the saliva was interrupted, and making its way into the loose cellular substance of the throat, had gradually distended the integuments to the enormous size above described. In this view of the case, the following questions suggested themselves as to the probable termination of the complaint, if left to itself; viz. whether there was any chance of its ceasing to increase by the action of the absorbents, or was it more likely to separate the skin from the chest, or to burst into that cavity, the windpipe, or externally? There could be no doubt, on the most favorable supposition, that it would for ever prevent the patient from gaining his own subsistence.

A tentative puncture was made into the most prominent part of the swelling, by which 20 ounces of a glairy, transparent fluid, of a light brown tinge, was discharged; a hard, movable substance was then felt within the integuments; it was extracted by enlarging the opening, and proved to be a part of the fluid which had become inspissated. The real nature of the case, and the absence of any other disease having been

ascertained, the opening was left free, in hopes that some contraction of the mass of loose skin would take place, and that a part of it would again adhere to the subjacent parts; but in consequence of the collapse of the sides, the discharge, which was mixed with blood and matter, was not free, and had to be pressed out every morning. The patient then absented himself for some days, during which the wound healed, the fluid again collected, and another puncture was made in consequence. After this the skin of the cheeks appeared to unite with the muscles, from which it had been separated, and the second object seemed in part to be gained; I therefore on being suddenly ordered to another station, recommended him to a medical friend, and instructed the people to squeeze out the secretion daily.

I heard no more of him till the 15th of March, when he arrived at Vizianagram, and both he and his relations earnestly requested me to relieve him. The opening had again closed; a new puncture was made, and several ounces of fluid of a lighter colour, and thinner consistence than before, were evacuated. A Tent was left in the wound, some inflammation followed, and a good deal of matter was discharged along with the glairy fluid; the skin contracted a little, but it was evident, that little could be expected from this plan. Having procured a very fine probe, I found it passed into the duct of the gland, and some saliva flowed from it: this diminished my confidence in the opinion I had formed of the disease,

but convinced me, that it could not be cured by endeavouring to restore the communication by the mouth, and removing the swelling by puncture and pressure. I therefore resolved to remove a portion of skin constituting the front of the sac, ascertain if the fluid came from the gland, and take such farther measures as might be necessary.

On the 30th, I placed him on a table, and punctured the tumor three inches above the sternum; and after the fluid was evacuated, cut away an oval portion of the skin (of the size of $2\frac{1}{2}$ by 2 inches), which was much thickened from the cicatrices of the cauteries and punctures. The throat now exhibited an extraordinary appearance: from behind the ears, over the angles of the jaw, and down to the chest, it seemed as if carefully dissected; the blue veins and parotid glands shining through the cellular membrane. I in vain looked for any opening, from which the fluid might come; the possibility of its being derived from the left parotid, or of its being an encysted tumor, whose sac had become condensed with the surrounding parts, at the same time occurred to my mind; in either of which cases nothing more remained, than to close up the wound, and to try what could be done by pressure. The cellular membrane in the mesial line had become condensed, and formed the hardness felt in the neck;—it was therefore removed.

Having examined with attention a soft round body, of the size and colour of a small lymphatic gland, partly embedded in the left submaxillary gland, I observed a very minute puncture, as if

from the point of a needle, and on gentle pressure, a glairy fluid flowed from it. I immediately proceeded to separate the gland from the surrounding parts, which at first was not difficult; but on getting into the hollow of the jaw, it was more firmly attached, and the space was so narrow, that it was difficult to use the knife. A ligature was passed through the gland, by which it was drawn out; but it was still difficult to tie the vessels which bled. One very considerable vessel, (the lower maxillary,) was cut, the bleeding from which was stopt by pressure made on the carotid; but it could not be secured, until Lieut. H., (who in the absence of another surgeon assisted,) put his thumb into the mouth, and pushed the gland downwards, which greatly assisted the rest of the operation. Then by passing a curved needle through the parts several times, and cutting between the gland and the ligature, the whole was removed, except a small process, which passed between the anterior belly of the digastric and the mylo-hyoideus muscles, and probably joined the sublingual gland; to this the actual cautery was applied.

The operation took up a considerable time, in consequence of the delay, which took place before the gland was ascertained to be diseased, the faintness which several times occurred from loss of blood and pain, and the necessity of caution in cutting parts deep and out of easy reach. Four ligatures remained on the vessels, the parts were carefully cleaned, and the edges brought together by three ligatures and plaster;

compresses and bandages were applied, and thirty drops of laudanum given to the patient, who was put to rest.

31st. Did not sleep from the opium; but rested well in the night. Complains of pain below the jaw. Ol. Ricini ʒss. Cold water to the bandages.

April 6th. On the 2nd had a purgative, which removed a slight degree of fever which had come on; the tongue became clean, and his appetite returned. The greater part of the wound has healed, and there is very little discharge. Slight fulness at the lower part of the left side of the neck.

10th. Fulness has increased, the part is painful, and fluctuation is evident; great anxiety is expressed regarding this, as the swelling originally commenced on the same side; it, however, has now the character of an abscess. The wound has healed, except at the ligatures, one of which, and the sutures have come away. A poultice is applied to the swelling, and the diseased tooth extracted.

11th. The cicatrix in the mouth has opened, and discharges matter, and a probe passes $1\frac{1}{2}$ inches down.

12th. The swelling having pointed, it is opened, and some exceedingly offensive pus, mixed with brown matter, is evacuated.

The poultice was left off in a couple of days, and compresses were applied over the cavity of the abscess, and the incision kept open by a tent. Under this treatment, it healed rapidly; a little discharge from the opening in the mouth continued some time longer. I did not see him again

till the 27th, when he was quite well; the cicatrix in his throat was very small, and did not disfigure him; the opening into the mouth had healed, and a minute portion of saliva flowed from the duct of the submaxillary gland, on the left side, probably from the sublingual gland.

The above observations appear to illustrate some points which Dupuytren considers to be still doubtful. I have therefore given the whole history, and the inferences it suggested, as they were recorded at the time, and when ignorant of the circumstances referred to by the Baron. The few books I had access to gave no information applicable to the case. From the account of the operation, it will be seen, that it was attended with serious difficulties; but as I have no pretensions to being a practised or skilful operator, and yet found no insuperable difficulties, although I had not the advantage of a medical assistant, I do not think it would be improper to repeat it, in aggravated cases, which cannot be cured by other methods. But before recommending the extirpation of the submaxillary gland for the cure of Ranula, the fact of the fluid being derived from the gland should be ascertained.

On this subject the Baron observes: "This Ranula then, according to general opinion, is occasioned by the accumulation of saliva in the excretory ducts of the submaxillary glands, and sometimes in those of the sublingual glands; but here much more rarely, than in the former. The excretory ducts of the submaxillary and sublin-

gual glands seem to be the only ones, which can present this dilatation of their parietes and retention of the saliva. The duct of the parotid is formed of a tissue too dense, and resisting, to permit the expansion. In this duct, fistula is the usual affection. However this may be, it is certain, at any rate, that we have yet no anatomical demonstration of the seat of the affection. It still remains to be shewn, whether it has really its seat in the excretory canal of the submaxillary salivary glands, or whether it consists simply in a cyst, formed by a membrane analogous to the serous tissues, and containing an aqueous humour; or, lastly, if its causes be the same as appear to act, in the patient before us."

In my patient, the origin of the tumor was clearly seen; the small blue gland-like body, from a very minute opening in which, the saliva passed into the cellular substance of the throat, was a small cyst, into which some branches of the duct of the gland were seen to run. I endeavoured to leave it unbroken, so as to have an opportunity of demonstrating this fact; but its coats being very thin, it was broken during the removal of the gland. Dupuytren refers to Jean Murimcks, as having thought he had demonstrated, that it depended on an accumulation of saliva in the ducts, which open under the tougue. That this is the origin of the tumors which appear in the mouth is pretty certain, and the peculiarity of the present case is explained, by the fact of one or more of the small ducts having been obliterated in a situation distant from the mouth.

So small a tube, as that which was closed up in this patient, could not admit of distension to the enormous size the swelling attained; accordingly, a very minute opening, (not larger than would be caused by the finest needle-point,) was formed, and the gradual distension of the integuments followed in consequence.

Ranula is said to affect children principally; but Dupuytren asks, "But may not the Ranula, properly so called, have been confounded in some of these cases with the serous sublingual tumors, which sometimes are so very voluminous, and descend as far even as the sternum? M. Breschet, who has published an able essay on this disease, in the *Repertoire d'Anatomie*, has opened these pretended Ranulæ five times, and he has ascertained in the bodies of new-born children, that they were either simple serous cysts, external to the thyroid, or else developed within this glanduliform substance." That such tumors may be thus formed, no one will doubt; and before detecting the real origin of the fluid, I feared that the enormous cavity before me had been caused by the secretion from the sac of an encysted tumour; the supposition was erroneous, and it is probable, that Breschet's cases were of the same kind, as it does not appear, that he did more than puncture any of them.

I shall now extract a few of the Baron's observations on the treatment to show, that the new method of cure he proposes, would not have answered: "Even with this degree of knowledge

of the cause and nature of the tumor, its cure would at first appear little difficult. Nevertheless, the history of surgery shows, that in reality the cure is but rarely and difficultly obtained. The puncture of the tumor in the mouth is the plan most generally practised, and a straight bladed bistoury, a lancet, or a trochar, is the instrument employed in the operation. If the tumor be limpid, little viscous or consistent, and if no concretions exist, this kind of paracenthesis will procure its evacuation, and give the patient some transitory relief; for the opening soon closes, the saliva re-accumulates, and the tumour re-appears. I. L. Petit reports a case, in which puncture with the trochar was repeated ten times, without curing the disease. The incision, or puncture, may be made in the apex of the tumor, which projects in the mouth, or at the anterior and superior part of the neck. This last situation has been considered an error of choice, and many practitioners believe, that the external opening may give rise to an obstinate fistula*. A case, borrowed from Muys, has been cited by almost every writer in proof of this notion. However, the fact communicated by Leclerc, a Surgeon at St. Vinox, to the Royal Academy of Surgery, would seem to prove, that these apprehensions are not well founded. Leclerc made the puncture under the chin, and enlarged the opening with the bistoury. A great

* How little cause there is for this apprehension appears from the difficulty experienced in the above case in keeping open the punctures.

quantity of fluid and sandy matter issued, and methodical dressings soon effected a cure. But this result itself seems to show, that Leclerc had to deal with a mere serous cyst; for had it been a true Ranula, the puncture would have only procured a temporary cure. The disease would have re-appeared, had its seat been in the excretory duct of a salivary gland. The actual cautery has been more frequently successful, but is far from being infallible, "as Sebatier and many other celebrated surgeons have found, and as our own experience demonstrates." Sebatier and Louis endeavoured to effect the cure, by placing in the opening made, by cutting out a portion of the walls of the sac, tents, pieces of bougie, wire, &c., which were drawn out daily; but these means also proved only *palliative*, and are consequently insufficient. "Could the injection of an irritating liquid into the evacuated sac induce a cure, by the inflammation and adhesion of the walls? But then the functions of the gland would be rendered useless; the liquid it would continue to secrete, finding no issue, would gradually distend the ramifications of the excretory duct lodged in the interstices of the lobules composing its substance, and might determine a swelling, followed by intense pain, inflammation, suppuration, and external fistulæ."

The new mode of practice then, proposed as being simple and certain, is to introduce into an opening, made with curved scissars, a solid elliptic cylinder of gold, silver, or platina, $1\frac{1}{2}$

lines in diameter, terminated by an oval plate, convex on its free surface. It is evident, that this mode of cure would not answer in cases, in which the *ramifications* of the excretory duct, lodged in the interstices of the lobules composing the gland, were obliterated, and where the swelling appears in the neck, as in my patient.

Occlusion of the orifices of the excretory ducts of the sublingual and maxillary glands may be the effect of an inflammation of the mucous membrane of the mouth, such as frequently arises from diseased teeth, the occurrence of two striking examples of which, a few months before, induced me to extract the diseased tooth in the present instance.

The first of the cases alluded to occurred in an officer, who had been a number of years in India, in whose right cheek an opening had formed, from which pus, occasionally mixed with blood, was discharged, particularly on eating or speaking; the mouth could not be freely opened; indeed a finger could hardly be forced between the back teeth: much inconvenience and suffering were caused by this latter circumstance. The disease commenced about five months before I saw him, with inflammation and swelling of the side of the face, for which leeches were several times applied, and the usual antiphlogistic plan pursued; but a small abscess formed and pointed, and was punctured in the situation of the present opening. His biliary and digestive organs were stated to have been disordered for some time previous. A

probe passed nearly one inch upwards, backwards, and outwards, towards the last molar tooth but one, which was completely covered by a soft swelling, the size of a nutmeg, formed from the lining membrane of the cheek. The gums were also much swollen. The tooth was carious, the shell of the crown presenting very sharp points to the soft parts. It had been diseased for 15 years, but had not caused any pain.

Various plans of treatment, injections, &c. had been already had recourse to; I therefore suggested the extraction of the tooth, which was readily agreed to, only it was requested that a new injection should have a farther trial of a few days; and as nothing seemed to be lost, I offered no objections. As was expected, no good resulted, and the attempt to extract the stumps of the tooth was made. This was attended with much difficulty, from the swelling with which they were covered, the closed state of the jaw, and spasmodic affection of the muscles, induced by the pain of attempting to overcome this sufficiently to admit of the instruments. After several unsuccessful attempts, in which the crown and sharp spiculi were removed, without much benefit, the fangs were extracted. After this the opening in the cheek rapidly healed, without any farther treatment.

A few months after, a Brahmin boy, 11 years old, was brought to me, who had a discharge from an opening over the left side of the lower jaw, a little before the ramus, for a year and

upwards. The jaws were nearly without teeth, and the few which remained consisted of large crowns, with little appearance of fangs. The opening in the cheek communicated with one of these teeth, from the root of which matter oozed. The patient and his friends would not permit farther examination. The remarkable circumstance in these cases is the communication between the roots of the teeth and the sinuses, which is not observed, I think, by Sir A. Cooper, in the cases he has described. The affection seems to be rather common in this country, and to resist all the ordinary modes of treatment.

CASES

OF

DISEASE OF THE VEINS,

WITH

OBSERVATIONS,

By J. MOUAT, Esq. M. D.

H. M.'s 13th Light Dragoons.

Presented, February 7, 1835.

Late pathological researches have thrown considerable light on the phenomena of disease exhibited by the venous system, so as not only to excite our interest, but to indicate the great importance of the subject. Our knowledge however of the changes induced, though extensive, is yet almost in its infancy; and as the following case possesses not only much interest in itself, but also, as being in some degree connected with a former paper transmitted to the Society, we shall offer a brief detail of its history.

Serjeant William Smith, of the 13th Light Dragoons, aged 33 years; in India, 14 years, delicate looking, and subject to frequent attacks of Dysentery.

Admitted into Hospital on the 7th March, 1834, with a severe attack of Dysentery, complicated

with hœmorrhoids, much fever, derangement of the digestive organs, and weakness. Though the severity of the complaint was removed by active treatment in 13 days, yet he continued to suffer from debility, and a relaxed state of his bowels, particularly at night, or towards morning, passing from 6 to 10 stools in the 24 hours, with occasional griping and straining. The stools were frequently mixed with slime and blood; he became weak, and latterly emaciated, suffering from paroxysms of fever, loss of appetite, dyspepsia, and occasionally swelling of both feet.

Still he was not confined to bed till the 15th September, when he suddenly experienced an acute pain in the right leg, extending from the hip to the ankle, with soreness along the course of the femoral vessels, which felt hard and painful on pressure. This was relieved by the application of a few leeches and fomentations on the situation of the vessels below the groin. On the 16th, the pain returned with the same violence, but was again relieved by leeches and fomentations, &c. On the 17th, he complained of pain in the opposite leg, from the iliac region to the knee, accompanied with fever, cold perspirations, restlessness, and great weakness. These symptoms were also removed by a few leeches, semicupium, and fomentations. On the 19th, the vessels of the right leg felt hard and sore, but only when pressed on in their course down the thigh; whilst those of the left side were soft, and without either pain or soreness on pressure. From this period,

he continued easy, though labouring under excessive weakness and functional derangement, until the night of the 24th September, or a few hours before death, when the pain returned in the left leg with such violence, as to make him quite restless and desponding, accompanied with difficulty of breathing and copious cold perspiration, feeble, irregular pulse, &c. Leeches were again resorted to, but without relief, and he expired about 1 A. M. in great agony.

Dissection by Mr. Trail and Dr. Clark, eight hours after death.

Head and *Thorax*—No appearance of disease.

On opening the abdomen, the liver was found slightly enlarged, and of a pale colour; the large intestines contracted, and bearing marks of a few old ulcers in the colon and rectum. The common iliac vein of the left side was filled with a firm coagulum, extending into the internal iliac, and also the external iliac, and crural veins, as far as the ham, where it terminated gradually. The upper part of the coagulum terminated abruptly at the junction of the two iliac veins, where it was particularly firm and of a cream colour, and adhered to the internal coat, which was slightly tinged red. These veins were much distended, and at the situation of the valves, had a puffed and dark appearance. The vessels of the right side appeared healthy, and bore no marks of the previous disease. The lower extremities were alike slightly œdematous.

Here then is a case attended by violent nervous

irritation, and an inflammatory disposition in one of the most important textures in the human body, with organic changes in the veins themselves, and occurring in a frame wasted and reduced by previous disease. There was no other apparent structural derangement, which could account for the symptoms during life, or for the rapid and sudden dissolution.

This case however brings to our recollection several similar ones, which have from time to time presented themselves, and which though then considered anomalous and inexplicable, we would now consider as more or less analogous to the one just detailed; we shall probably therefore be excused, for wishing to elicit inquiry, by rendering Serjeant Smith's case a more fixed and permanent record, by submitting it to the consideration of the Society.

Bangalore, October, 1834.

The foregoing observations had scarcely been drawn out and ready for transmission, when the following case put on symptoms so analogous to the two already detailed, that we waited its termination.

Private John Martin, of the 13th Light Dragoons; a stout muscular person, of rather intemperate habits. Ætat 30; in India 5 years. Admitted into Hospital on the 9th August, 1834, with a severe attack of Remittent Fever, incessant cough, pain in the epigastrium and stomach, giddiness, loss of appetite, debility, &c. The fever was soon removed by copious depletion,

and a sore mouth, from calomel ; yet he continued to suffer from cough, mucous expectoration, and a relaxed state of the bowels, passing from four to 10 dark-coloured stools in the 24 hours, with griping, sickness at stomach, and a total loss of appetite, with lassitude and debility, until about the 15th September, when the cough and irritability of stomach left him, and his bowels gradually became more healthy, passing only two or three evacuations daily, with evident improvement in his strength and appetited. About the beginning of November, he was considered convalescent.

On the 7th of that month he was suddenly attacked with quotidian paroxysms of fever, preceded by cold rigors, acute pain across the temples, &c. These symptoms continued to return daily, at irregular periods, with more or less pain in the head, until the 16th, when the fever, &c. left him, and he was once more free from complaint, but weak ; looked pale, sallow, and bloodless, with loss of appetite. However, on the 17th, he complained of great pain in the left shoulder, and the following day, in the left side, in the region of the spleen, increased on pressure ; had a quick pulse, heat of skin, and was restless. These symptoms were removed by the application of a few leeches to the side, and he remained pretty well until the evening of the 22nd, when the pain of side returned with quick pulse ; it was now situated higher up, and was increased on a full inspiration, until he was again relieved by abstracting 16 ounces of blood from the arm.

On the 25th of November he complained again of pain in the left shoulder, and in the calf of the left leg, the pulse and skin indicating febrile excitement. He was bled to 12 ounces, which gave him much relief, but reduced him extremely. On the 27th, the pain of side and left leg became more acute, the former much increased on pressure. Leeches and fomentations gave much relief, and he continued easy until the 1st of December. In the morning of that day, he suddenly experienced severe pain in the left groin, and along the femoral vessels, extending to the ankle and foot, much increased on pressure. The vessels felt hard, and like a chord under the finger. The leg and foot appeared considerably swollen, and pitted on pressure. Leeches were applied to the femoral vessels below the groin, with fomentations, which gave him great relief; and in the evening he was free from pain, though the swelling continued.

2nd. Continued easy; leg appeared shining and tense, but less swollen; the iliac and femoral vessels felt hard and chord-like, but gave no pain on pressure, except the saphena, which was very sore. In the evening, however, he felt great soreness in the course of the vessels; the limb was tense and glossy, and the stomach rejected every thing. Pulse quick. Tongue dry. Fomentations, &c. continued.

3rd. Appeared better: the swelling and pain in the course of the vessels were less; but in the evening he complained of a return of pain in the groin. Stomach still irritable. Pulse quick. Ten

leeches were applied below the groin, which relieved the pain.

4th. The leg appeared more swollen, but there was no return of pain. Stomach still irritable. Bowels regular. Fomentations continued.

5th. Appeared restless and delirious; the leg and instep much swollen, and the vessels hard. Stomach very irritable, rejecting every thing. Tongue dry and crusted; pulse very quick. Ten ounces of blood were taken away from the arm, and a blister applied over the region of the stomach. In the evening he looked better and more composed; the swelling of the limb increased, but was free from pain. A quarter of a grain of morphia was administered at bed-time.

6th. Felt better. No pain. The leg less swollen, but tense and shining. Friction with soap-liniment was used with much relief. Stomach still irritable, but in a less degree. A quarter of a grain of morphia was given at bed-time.

7th. Felt better and slept well. Stomach less irritable. Pulse 120, vibrating. Leg less swollen. Urine copious, no sediment, and no pain in the course of the vessels.

8th. Slept ill. Respiration quick and short. Leg much swollen. Mouth dry. Pulse feeble and quick. Great anxiety. Tongue dry and crusted. About four P. M. he became suddenly worse—difficulty of breathing, rapid pulse, restlessness, &c. supervened, and he expired at six P. M.

Besides the remedies enumerated during the last three weeks, he had blisters, purgatives, antimonials, diuretics, effervescing draughts, &c.

Dissection by Dr. Clark, who has kindly furnished the following detail from his very minute examination of the body, fifteen hours after death.

Head.—No disease of the brain, vessels, sinuses, &c.

Thorax.—Both lungs adhered firmly to the pleura, diaphragm, and pericardium: a gelatinous and fibrous secretion between the lungs and inner surface of the pleura, forming the bond of union; outer surface of pleura contained particles of fat; lungs full of sputa; cavity of thorax contained a large quantity of serous fluid, and there was an unusual proportion of serum in the pericardium.

Abdomen.—Stomach healthy, but mucous membrane rather paler than usual; intestines, both externally and internally, healthy; spleen adhered very firmly to the diaphragm, and on breaking through the adhesion, a large abscess was discovered; cavity extremely ragged, and having no lining membrane; liver diseased; right lobe like Spanish soap or red sandstone, (this appearance not confined to the surface, but dipping down deep into the parenchyma;) left lobe exhibited the white dram-drinking character, a cicatrix in both lobes. Other viscera free from disease. Evident swelling in the left groin, over the seat of the iliac vessels, with great tumefaction of the whole left inferior extremity; right limb, of its natural size: the comparative dimensions of the two as follows: *Left* thigh, near the groin, 21½ inches; right thigh, near the groin, 17 ditto; *left* thigh, immediately

above the knee, 15½ ditto; right thigh, immediately above the knee, 13 ditto; calf of *left* leg, 14¾ ditto; calf of right leg, 12½ ditto; *left* ankle, 11 ditto; right ankle, 9½ ditto; much fluid in the cellular substance of the diseased limb, particularly near the foot; the saphena major and superficial veins of the thigh and leg greatly diseased, their cavities entirely filled up with a firm and apparently organized secretion, their course more tortuous than natural, and in certain parts, enveloped in masses of fat: upper portion of the saphena more diseased than the lower; the femoral vein, and all the deep seated veins of the limb full of the same substance, their cavities completely blocked up, the vessels themselves greatly enlarged. Towards the foot, the sinuses of the valves in the deep-seated veins were enlarged, bulged out, and of a darker colour. There was a great collection of fat in the sheath of the femoral vein. The iliac and femoral veins of the same side were enormously increased in magnitude, and similarly diseased, forming a solid mass, like what is found in a limb that has been injected for dissection. The diseased state extended into the vena cava, and terminated about an inch and a half above the junction of the common iliacs. The clot was less firm, and apparently of more recent formation in the vena cava, and on being cut into, had quite the appearance of marrow, with a red tinge on its surface. Where the common iliac divides into external and internal, the coagulum was firm, of a dark red colour, and its surface covered with a pus-like

secretion, and this was the appearance of the whole venous system of the left side, down to the foot. The internal coat of the vessels appeared slightly tinged red. The veins of the spleen, liver, and stomach, were free from disease; and the vena cava, (with the exception of an inch and a half of its lower portion,) traced up to the heart, exhibited no morbid appearance. The heart was rather large, and extremely flabby, its parietes quite relaxed and soft. No disease of the venous system in the upper extremities or neck, or in the lower extremity of right side. Circumference of diseased iliac vein, $2\frac{1}{2}$ inches; that of the healthy iliac vein, $\frac{1}{2}$ an inch.

The annexed sketch gives the appearance of the preparation, (which has been preserved,) of the parts.

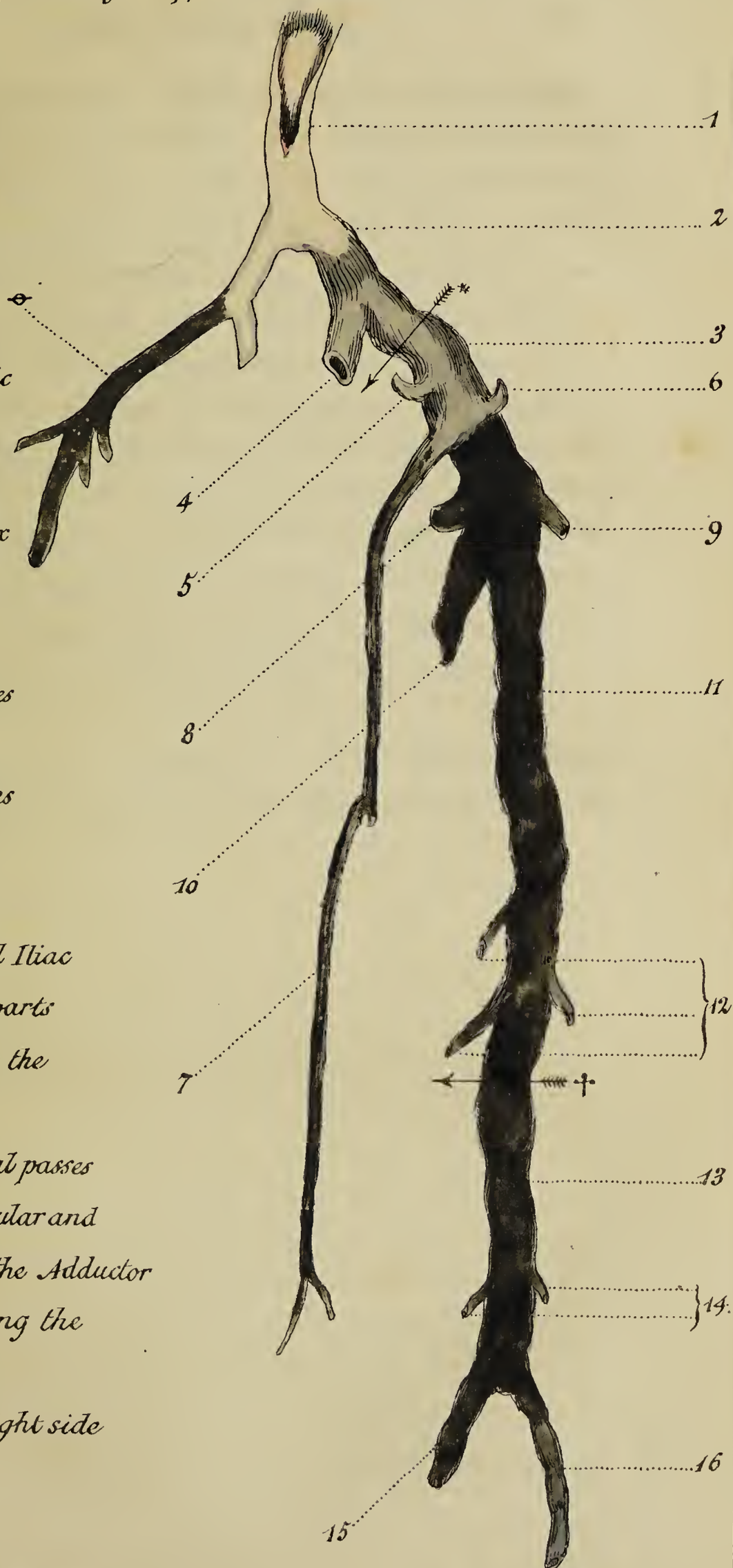
As Martin's case may be deemed interesting, it has been thus minutely detailed, since its history and pathology unite so many of the characters of Phlegmasia Dolens, as described by Dr. Davis, and more fully illustrated by Dr. R. Lee. Indeed it has just fallen to our lot to attend a lady, who a few days after her confinement, got that painful affection. In her case, the pain, tenderness, hardness, &c. was in a measure confined to the saphena, femoral and other veins of the thigh and leg, till lost in the iliacs. The whole limb was tender, but more so in the track of the blood vessels, along which there was shooting pain as well as painful swellings, where the lesser veins entered the large trunks. The disease

ran its course in one leg, and pursued the like, but more violent career in the other limb; and the state of the vascular affection in both was too well marked to admit a doubt of its nature, whatever the other changes in the system may have been. My friend Mr. Hamilton, of H. M. 39th Regiment, also witnessed the progress of this case.

The three cases, and fatal ones too, now laid before the Society, might be called Phlegmasia Dolens, or Beri Beri; if the descriptions of the latter malady, which we have seen, be correct: and as the venous system in each of them was diseased, it naturally leads to the conclusion, that these two diseases are more or less associated, if not one and the same affection; the subject however is beset with difficulties. Perhaps future inquiries may indicate, that there are two kinds of disease, separate and specific, usually called Phlegmasia Dolens; and also two distinct maladies, which have been confounded under the head of Beri Beri: so that in truth there may be three separate diseases, viz. a Phlegmasia Dolens, a Beri Beri, and a diseased state of the veins, precisely similar, whether occurring in the puerperal female, or at the close of chronic disease, in the male, in this country. But we have no adequate grounds at present to adopt such a conclusion. Neither does it accord with the usual simplicity, so characteristic of the operations of nature; nor can we place implicit reliance on the histories of Beri Beri, as hitherto detailed. With every latitude, therefore, to our reasonings, there

Drawing representing the appearance of the Blood Vessels in Martin

1 *Vena Cava*
2 *Common Iliac*
3 *External Iliac*
4 *Internal Iliac*
5 *Obturator Vein*
6 *External Epigastric*
7 *Saphena Major*
8 *Internal Circumflex*
9 *External Circumflex*
10 *Profunda*
11 *Femoral Vein*
12 *Muscular Branches*
13 *Popliteal Vein*
14 *Articular Branches*
15 *Posterior Tibial*
16 *Anterior Tibial*
* *Where the External Iliac passes under Pouparts ligament becoming the Femoral Vein*
✝ *Where the Femoral passes between the muscular and tendinous part of the Adductor magnus becoming the Popliteal*
⊖ *External Iliac right side*



cannot be more than two diseases, a Phlegmasia Dolens, and a Beri Beri, the latter liable to be confounded with the former; though for our own part, we should rather consider them in the present state of our knowledge, and so far as our observations extend, one affection. We are the more firmly led to adopt this conclusion, from the similarity of the constitutional disturbance during life, in all the descriptions we possess of both maladies;—the dropsical effusion and ædematous swellings so characteristic and similar in each;—the diseased state of the venous system, the fatty or brain-like deposits in various parts of the body, &c. all tend to shew their analogy or identity.

The annexed drawing by Mr. Meyer gives a very correct view of the diseased vessels in Martin.

CASE

OF

ULCERATED STRICTURE

OF

THE ŒSOPHAGUS

COMMUNICATING WITH THE TRACHÆA.

By A. K. LINDESAY, Esq.

Presented January 4, 1834.

The following melancholy case deeply interested me, and I am persuaded that a short account of it will not be unacceptable to the Society.

Sergeant James Casey, Æt. 55; in good general health, and who very seldom indulges in intemperance, some weeks before admission into the Hospital in June last, fell, when tipsy, and felt as if his chest had struck on a sharp hard body; from the time of the fall, he has had slight wandering pain in upper part of the right side of the thorax, and has gradually lost the power of swallowing solid food. No disease of the heart, lungs, or ribs, could be detected. The pain was speedily removed by leeches, blisters, and attention to the general health; but the difficult deglutition remained

unmitigated; the smallest tube of a stomach-pump could be passed into the stomach, giving a feeling of continued resistance for an inch or so, about opposite to the top of the sternum; the orifice of the tube on withdrawal was always filled with thick puriform mucus, streaked with blood. He was somewhat benefited by passing the tube at intervals, after he had left the Hospital on account of the pain above alluded to, and he continued in good health.

About the end of August, he returned as a patient, stating that he felt increasing difficulty in taking food: he had lived for some time on bread reduced to a pulp in milk, which he was obliged to swallow very slowly. Two attempts on different days were unsuccessful with the tube formerly introduced; on the third day, Aug. 30, an elastic catheter was made to pass the stricture after using considerable force; the end of the catheter, when the point was fairly engaged in the thickened part, was just within the teeth; satisfied with this for the day, the stilette of a small catheter was fitted with a bit of sponge, and slightly curved, laterally, so that on introducing it, the sponge protruded at the eye of the instrument, and next day, Sept. 1, a weak solution of nitrate of silver was applied by the sponge, and a little thrown into the catheter, while withdrawing it through the stricture; no bad effect followed this attempt at medication.

2nd. Repeated the solution, which caused some smarting.

7th. Daily proceedings, as before, have not been productive of decided benefit; for though the instrument passes more easily, he cannot swallow better, having to suck pulps and fluids very slowly; nothing solid will pass, not even minced meat, or soft boiled rice. Health good; not emaciated.

18th. To apply the solution more directly, I cut off the point of a catheter; the sharpness that necessarily followed caused some pain, and now not even a smooth instrument can be passed: it appears to hitch on a fold, and not to engage in a gradually thickening constriction, as formerly.

Oct. 2nd. No tube passed since last report: he is much as before, as to deglutition; the liquids accumulate and return, if he sucks hastily. A catheter can now pass, and (to attempt dilatation of the stricture from below, as recommended by Fletcher of Gloster), a piece of gut was fitted on a catheter, introduced flaccid, and by blowing made as large as a walnut: after inflation, it was easily withdrawn. It was now noticed, that there were difficulties to the passing of any instrument, before reaching the former seat of stricture.

Nov. 26th. Has not been to me since last date: he has been gradually getting worse, and is troubled with a cough, hawking up glairy pus and blood. He says, that he has often introduced the catheter with the gut; but I suspect not *through* the stricture. Yesterday, about 11 A. M., during a violent fit of coughing, he threw up a mass of coagulated blood, (as he described it,

though it was probably a slough,) and since that time, has not been able to swallow a drop of liquid. I introduced a catheter, which passed *into* the thickened parts, *not beyond;* injected a little water to relieve thirst, if possible, but it was *blown* back, with much coughing and spitting of bloody mucus: so that now there is evidently a communication between the trachea and œsophagus; there is slight fulness of throat: no pain either of throat or chest, he however coughs a good deal: no anomalous state of heart or large vessels: he has become much emaciated since last report: ordered nutritive enemata; made a caustic blister over the diseased parts, to which a watery solution of opium was applied: every attempt to swallow, causes violent coughing.

27th. Has not swallowed a drop; has retained enemata for several hours, but thirst and hunger are urgent. Slept badly. He anxiously begged me to try the tube again, but it would not pass the stricture, and fetid air was freely expelled through it, while at the obstruction, at each cough and expiration. Enemata of strong soup, eggs, a little wine, and laudanum to be continued, and he was directed to remain in a warm bath, as long as he was able.

Nov. 28th. Disliked the bath, which did not relieve him. Retained one enema some hours, another all night. Passed much urine; slept badly. Has not swallowed a drop. Washes his mouth frequently. Again tried the stomach tube, bending the point

so as to slip along the spine. One long attempt failed, it being stopped as before, at the point from which the air rushed; on again trying, however, the tube happily passed through. Two ounces of wine and some water were immediately poured in; before anything else could be brought, he made the tube be withdrawn, dreading an effort to vomit. He thinks that the enemata do him much good, having felt no hunger during the night. They are to be continued.

At 2 P. M., again passed the tube. Gave him soup, wine and water, and a little wine and water in the evening.

29th. Suffers much less; sleeps very badly: the tube less easily introduced. He had tea for breakfast, and soup, wine and water, P. M.

30th. Had a good night; feels comfortable: the tube apparently passed, but the liquids caused violent coughing: the instrument was flaccid, and had probably doubled or coiled above the stricture. At 2 P. M., again failed with the small tube; but a more rigid and large one passed into the stomach. A plentiful liquid meal administered.

Dec. 1st. Bad night. P. quicker and weaker. He describes his restless nights like those during 'horrors,' after drinking. Large tube passed, and he was fed morning and evening as before.

2nd. Good night. Retained enemata well. Increasing difficulty in introducing the tube. It seems to *tear* granulations or slight adhesions. Fetor of air from the tube most offensive. Fed as before.

3rd. No change. Fed as above.

4th. Much weaker. Voice pectoral. P. tremulous, compressible. T. clean. Retains enemata for several hours: no fæces observed, when they are voided. Fed as usual.

5th. Tube passed easily. Not worse.

8th. Daily nourished as usual. Weaker. Not in other respects suffering.

9th. A little laudanum in his evening food, caused, (contrary to my intention,) a most disturbed night. To-day, tongue red and dry. Pulse scarcely to be felt. Tube caused coughing and retching, and had to be withdrawn without giving him any drink.

12th. Will only take food once a day, and that without wine, as he almost always vomits what is given to him, with severe straining and cough; the enemata have been retained by reducing the quantity of each to two ounces, and 5 or 6 are given daily.

14th. Continuing since last report to vomit, with violent coughing, all the nutriment given by the mouth; he has since yesterday evening refused any food. The small enemata are retained, but he is hourly getting weaker. No pulse at the wrist.

5 P. M. Hands cold. No pulse. Fast sinking, still sensible, refuses food.

He died at $7\frac{1}{2}$ P. M.

Dissection, about 13 hours after death.

Body excessively emaciated. Lungs extensively adhering; a little puriform coagulum on

some parts of the pleura pulmonalis; both lungs at the upper part looked florid, felt solid, and on being cut and pressed, blood and pus appeared; no tubercles or cavities were found, and the greater part of the pulmonary texture was healthy. Heart and large trunks natural: the whole length of the œsophagus and trachea was removed for farther inspection; the pharynx, where cut, was vascular, and covered with green mucus.

Liver, small, adhering, but natural in structure, as well as the gall-bladder and ducts; the spleen small, not diseased; the omentum perfectly void of fat, and beautifully separable into the two layers, from the pubis to the stomach and colon respectively. Stomach very much injected at its great curve, and internally at this part, the villous coat was found much inflamed; the rugæ very prominent, and the color of the inflamed portion nearly black: it only contained about a spoonful of brown liquid; at the pylorus, all unusual vascularity ceased, and the small intestines were healthy; the colon, from the caput till near the middle of the sigmoid flexure, considerably injected; mucous coat evidently the subject of recent inflammation: it contained small specks of yellow natural-looking fæces; the lowest part of the colon and rectum naturally pale, and quite empty; kidneys, bladder, and abdominal vessels were all inspected, and found free from disease.

On deliberately examining the removed parts, there were found no marks of disease in the larynx

or front of the trachea: at its sides, and extending around the œsophagus to the adjacent portion of the arch, and descending aorta, there was considerable increase of substance; the aorta was quite healthy, adhering by its outer coat to the thickened œsophagus; on cutting out a portion of the trachea in front, an opening was observed communicating with the œsophagus, irregularly circular, about the area of a shilling, and situated about half way between the cricoid cartilage and the bifurcation; the mucous membrane of the trachea, for some distance above and below the aperture, was vascular, and covered with purulent mucus; tracing the œsophagus from the cardiac extremity, by slitting it, the lining membrane was found vascular, but not decidedly diseased, until just above the bifurcation of the trachea, where it was found thickened and ulcerated in its whole circumference: the ulcer occupied fully four inches of the canal; it was covered by thick pus, and was of a very irregular surface, there being several pale lumpy projections, and a few specks, which felt rough and cartilaginous; the canal above the aperture was much more capacious than below, but even downward, it easily admitted the little finger to pass*.

The case, as to its principal features, so completely explains itself, that I shall only remark

* I have put the diseased parts in spirits, and shall take an early opportunity of forwarding the preparation.

the absence of all pain, in both the pulmonic and gastric inflammations. Up to the time of his decease, he absolutely denied suffering any local pain: the gastritis probably began five days before death, (on the 9th,) as evinced by the red tongue, vomiting, and dread of wine; the pneumonic affection may reasonably be ascribed to alimentary matters occasionally penetrating into the bronchia, either during attempts to swallow, or during the long inspirations after vomiting, while portions of the liquids ejected were still in the pharynx: the fits of coughing, after vomiting, were always very distressing.

OBSERVATIONS ON DRACUNCULUS,

PART II.

By C. MOREHEAD, M. D.

Bombay Medical Establishment.

Presented March 7, 1835.

In a former communication* on the subject of Guinea-worm, I suggested the propriety of an endeavour to accumulate facts relative to the localities in which the disease prevails, and ventured to predict the probability, that by such an order of procedure, we might be enabled to detect some coincidence of circumstance, to which it might be legitimate to relate a disease so characteristically endemic. The present paper is in prosecution of such views, and must be looked upon as a mere narration of facts, collected through the kindness of friends, and my own personal inquiries. With the extension of the field over which my investigations have ranged, the prospect of immediate generalization has become obscured, and rendered it imperative, that for the present, I should abstain from all farther attempt at theory—an alternative, however, with which I

* Vide Transactions of Calcutta Med. and Phys. Society, vol. vi.

the more readily comply, from its being my intention, at some future period, to pursue the subject still farther. I cannot, however, pass altogether unnoticed, the views which I formerly hinted at, of a probable relation between the prevalence of Guinea-worm and the presence of the secondary trap rock formation; both because their influence may be more or less traceable in the detail which follows, and because the plausibility of the supposition, that geological structure is an agent capable of influencing animal life, has been strengthened by the inquiries of others.

The observations on Goitre, by Mr. McClelland, in the first part of the seventh volume of the Society's Transactions, tend to invest geological structure with an importance, certainly as yet unaccorded to it in the etiology of disease; and moreover, I recollect lately to have seen a notice of observations made on the continent of Europe, which had plainly a similar tendency; but to which, I regret I am at present unable to refer. For such reasons, to facilitate future reference, and prevent unnecessary repetition, I have thought it advisable to premise a short Geological Sketch of India, sufficiently minute for the object in view. It is in part the result of personal observation, and partly gleaned from the meagre materials on the Geology of India, which I have had an opportunity to consult; but it may be well to add, that I am too slightly versed, in this interesting science, to entertain the hope of adding to our stock of information regarding it.

The range of Western Ghauts from Cape Comorin, to somewhere about latitude 17° north, is of primitive rocks: thence northward, it is of secondary trap formation; southward of the Taptee, the range is turned in an easterly direction, forms the southern boundary of the valley of the Taptee, is still of secondary trap, and is finally stopped by the Wurda river towards the east. The Sautpoora range constitutes the northern boundary of the valley of the Taptee, and southern of the valley of the Nerbudda; it is also of secondary trap formation, and stretches from Rajpeepla, in the west, to the frontiers of Gundwana. The bed of the Nerbudda, with its northern boundary, the Vindhya range, is also of secondary trap formation; it is succeeded towards the north by the table land of Malwa, for the most part, also of secondary trap, and alternating with primitive rocks, towards its western and northern frontiers. Then succeeds the large plain of the Ganges, cutting off all connection between the mountain ranges to the southward and northward; the latter are all primitive. Of the Geology of Behar we know little; but the mountain ranges are probably primitive: they bound the plain of the Ganges, are connected with the Vindhya range, with the mountains of Gundwana, Orissa, and the Circars, all which may be said to pass into the Eastern Ghauts, south of the Kistnah river; and this chain, extending in a south-westerly direction, forms a junction with the Western Ghauts north of the Paniany river, near Coimbatoor. The chain of Eastern Ghauts,

and the country intermediate between them and the western range to the southward of 15° 30′ N. are primitive, chiefly of sienite and granite rocks.

The secondary trap table land of the Deccan, may be described as being bounded towards the north, in about latitude 20° N. by the range, which forms the southern boundary of the valley of the Taptee. It is bounded to the west by the chain of Western Ghauts, but the eastern and southern boundaries are of much more difficult indication, and the exact line of junction with the primitive rocks to the east and south is, as far as I know, a desideratum in the Geology of India. To the northward of latitude 18° N., I believe that the secondary trap formation may be described as reaching towards the east, as far as longitude 77° E., thence, in a south-westerly direction, it crosses the Kistnah, in about longitude 75° 30′, and the Gutpurba river, in about longitude 75° 20′ E., continuing in a south-westerly direction to about 74° 40′, it turns to the northward, and passes into the chain of Ghauts as before described, in about latitude 17° N.: thus the limit of the secondary trap formation is made to pass in its most southerly part, somewhere between Gokauk and Belgaum, or about latitude 16° N.; but though this be probably correct, yet it must not be forgotten, that isolated hills of secondary trap rocks are found overlying the primitive rocks, much to the southward. I have verified them at Belgaum, and I suspect they extend even still farther in that direction.

The country, between the chain of Western Ghauts and the sea, is from the Taptee river to latitude* 18° 20′ north, of secondary trap formation; thence passing to the southward, the undulating hills are of laterite, which to 17° N. overlies the secondary trap, and often extends over the highest summits of the Ghaut range†. The laterite extends to Cape Comorin, and to the southward of 17° N., the subjacent rocks are primitive. To what extent the laterite is found to the eastward of the Western Ghauts, I do not know. I have however observed in the neighbourhood of Kulladghee, that many of the banks of the stream courses consist of a coarse conglomerite, very closely resembling laterite, and evidently in process of formation from the detritus of the primitive rocks. I have also observed the bund of a tank near Triveloor, about 30 miles from Madras, to be made of a stone very much like the laterite, from which I conclude, that such formation must exist in the Carnatic.

The details which follow, relative to the presence or absence of Guinea-worm in the Northern and Southern Concan, in the sub-collectorate of Bugulcotta, and the zillah of Cuddapa, are abridged from official reports made by the village or district native functionaries, to the collectors of the respective zillahs, in reply to certain queries

* When degrees of latitude and longitude are specified, it is not to be understood that such have been accurately ascertained; they must merely be viewed as an approximation to the truth.

† The Mahabuleshwur Hills for example.

which were kindly circulated at my request by Mr. Giberne, collector, Northern Concan; Mr. Forbes, collector, Southern Concan; Sir R. Arbuthnot, sub-collector, Bugulcotta, and my brother, Mr. W. Morehead, sub-collector of Cuddapa. Their general accuracy may consequently be depended on*.

NORTHERN CONCAN†.

Talooka Ryghur.

The greater portion of secondary trap formation, in some places overlaid with laterite; it is in about latitude 18° N., and Mahar is one of the principal villages. In the report from this talooka, it is stated that the greater number of villages are exempt from Guinea-worm. The names of 81 are mentioned, in which the disease prevails.

Talooka Panwell.

Of secondary trap formation; it reaches inland from the coast, opposite to Bombay, towards the

* The position of the line of junction of the secondary trap formation, with the primitive rocks, where it crosses the Kistnah and Gutpurba rivers, is stated with some confidence from personal observation. For the northern limits of the laterite, and southern, of the secondary trap table land, I am indebted to Captain Jervis, of the Engineers, who stated them to me in the course of conversation: but as that gentleman spoke from recollection, there may be some trifling inaccuracy; I am confident, however, that it cannot be to any great extent.

† In the reports from the Northern and Southern Concan, no mention is made of the kind of water used; but the omission is of little consequence; for we know that it must consist of well or nulla water. The water of the rivers, which are apparent in the map, is affected by the tides for 20 or 30 miles from their junction with the sea, and of course is not used for domestic purposes.

Ghaut range. The names of 45 villages are mentioned, in which Guinea-worm is very prevalent. Those, in which it does not occur, or only to a small extent, are not specified.

Talooka Saksee.

Of secondary trap formation; occupies part of the strip of land between the Western Ghauts and sea-coast to the southward of Bombay, and is in about latitude 17° 30′. The villages of Nagotana and Penn are in this talooka. In the report, it is mentioned, that there are not any villages completely exempt from Guinea-worm, but that it does not prevail at all times. The names of 42 villages are specified, in which Guinea-worm prevailed at the date of the report, (8th Sept. 1833.)

Talooka Rajpooree.

Principally of secondary trap: the northern limits of the laterite are probably in this talooka, which occupies the coast to the southward of that of Saksee, not however extending so far to the southward as latitude 17° N. The village of Tullah is in this talooka. In the report it is stated, that there are 308 villages in the talooka; in 186 of these, Guinea-worm occurs, to a very small extent. The names of 122 are specified, in which Guinea-worm prevails to a great extent.

Zillah Southern Concan.

Talooka Severndroog.

Upper crust of laterite, with probably some reappearance of the secondary trap rocks; towards the Ghaut range, it occupies a part of the strip of coast, to the southward of the talooka of

Rajpooree, and includes Bancoot. In the report it is mentioned, that in the year 1832, there were three villages affected with Guinea-worm: in the village of Kelsey, only two individuals suffered.

Talooka Ungemweel.

Upper crust of laterite; it occupies a portion of the coast to the southward of the former talooka, and is almost entirely exempt from Guinea-worm.

Talooka Rutnageree.

To the southward of the former; the upper crust of laterite. The report from this talooka has reference to the year, in which it was written (1833.) There were 364 villages, in which there had been no Guinea-worm, and 13 villages, in which there had: in all 29 individuals affected: and it is stated, that one had passed the previous monsoon in Bombay, another had come from elsewhere, and a third from Sholapoor. It is stated generally, that those people who come from beyond the Ghauts, are subject to Guinea-worm.

Talooka Viziadroog.

Upper crust of laterite; it occupies part of the strip of coast to the southward of Rutnageree. In the reports it is mentioned, that the villages of this talooka are for the most part exempt from Guinea-worm; but that it is sometimes observed in traders, who come from beyond the Ghauts, and also in those inhabitants, who may have gone beyond the Ghauts, and then returned to their own villages.

Talooka Malwan.

Upper crust of laterite: it is the most southerly talooka of the zillah of the Southern Concan, and reaches a few miles to the southward of latitude 16° N. In the report, it is stated, that Guinea-worm is not known in this talooka, except to individuals who may have gone beyond the Ghauts, and used the bad water of that country.

Sub-Collectorate of Bugulcotta

May be described as ranging between latitudes 15° 40′ and 17° 30′ north, at its northern limits, ranging east and west between 75° 50′ and 76° 30′ east longitude; at its southern limits, between 75° and 76° east longitude.

Talooka Indy.

Of secondary trap formation. Before passing so far to the eastward, the secondary trap hills, which form the Western Ghauts, in that latitude, have gradually crumbled down into the black level plain of the Deccan. This talooka forms the north-western part of the sub-collectorate, and extends from the river Beemah to the Kistnah, touching the latter in a point of very few miles extent, and extending along the southern bank of the former for about 30 miles. The western limit of the talooka passes a few miles to the eastward of Beejapoor. I have reports from 162 villages; in 98 Guinea-worm occurs, more or less, annually, and chiefly in the hot months of March, April, and May. Of these 98 villages, 71 use the water of wells exclusively; 20 that of

nullahs*, the water of 14 of which is described as brackish; seven use river water, in two of which the Beemah is specified.

Guinea-worm occurs every third or fourth year, in 43 villages: of these, four use the water of wells; 37 that of nullahs; one, river water: in one the nature of the water is not specified. Guinea-worm never occurs in 21 villages of this talooka: of these, 10 use the water of nullahs; three, well water; seven, river water; four, the Beemah specified: in one, the nature of the water not mentioned.

Talooka Moodebahal.

To the eastward of Indy, it also extends from the Beemah to the Kistnah, and is the most easterly talooka of the zillah. The line of junction between the secondary trap formation and the primitive rocks, probably passes through this talooka; I consequently cannot be positive as to its geological structure. I have reports from 143 villages; in all of them Guinea-worm appears annually, but to no great extent, and is said chiefly to affect those who are exposed to fatigue, and are imperfectly nourished: of the 143 villages, 90 use the water of wells, often of indifferent quality; 28, the water of nullahs; eight, of excavations made in the beds of nullahs; 15 use river water, in three of which the Kistnah is specified; 2 use the water of tanks.

* Small streams, which generally become dry towards the hot season, when water is frequently obtained by excavations made in their beds.

Talooka Bugulcotta.

The southern bank of the Kistnah forms the northern limit of this talooka, for the extent of about ten miles east and west of the junction of the Kistnah with the Gutpurba river; the southern limit is about ten miles to the southward of the Gutpurba. The formation of this talooka is primitive, chiefly primitive limestone and clay-slate. The military station of Kulladghee* is situated in it. I have reports from 95 villages, in 62 of which, Guinea-worm never occurs: of these, 33 use the water of the Kistnah, and 29 that of the Gutpurba, both rivers of considerable size, and constantly supplied with running water.

In the reports from all these villages, the immunity is ascribed to the fact of river water being used; and in many, allusion is made to the fact of its being running water. When neighbouring villages are mentioned, in which the disease pre-

* I was stationed at Kulladghee during the months April, May, June, and July, 1833, in Medical charge of the 26th Regt. N. I. The Regiment had been at the station about three years. During the time I was in charge I recollect only one admission of Guinea-worm, and that of an individual who had passed the previous monsoon at Ahmednugger. The other troops at Kulladghee consisted of a troop of the 1st Lt. Cavalry, detached from Sholapoor, about 90 strong; and of these, there were generally five or six in hospital with Guinea-worm. I recollect Mr. Peart, who was in charge of the troop, remarking to me, that he had observed a marked increase of facility in extracting the worm after a fall of rain, and this in cases, in which the previous progress had been tedious. This I have certainly never myself observed, nor am I aware, that it has been previously remarked by others.

vails, such prevalence is always attributed to the want of river water.

In 22 villages of this talooka, Guinea-worm occurs every second, third, or fourth year, chiefly in the months of March, April, and May: of these, seven drink the water of the Kistnah; five, well or tank water; 10, well or nullah water. In 11 villages, Guinea-worm occurs every year to all castes indiscriminately: six use well water exclusively; four, well or tank water. In the statements from all the villages, the disease is said to be owing to the use of bad water; and in five, allusion is made to trees growing in the neighbourhood of the wells, and the leaves falling into the water, causing its deterioration.

Talooka Hoongoond.

To the east of Bugulcotta, its northern limit is formed by the Kistnah, which in the same situation constitutes the southern boundary of the talooka of Moodebehal. The talooka of Hoongoond extends farther to the southward, than that of Bugulcotta. I have never been in it; but from its position it must be of primitive formation probably limestone and clay-slate are the prevailing rocks. Reports from 128 villages; in 46 of which Guinea-worm appears, more or less every year: of these, 32 use well water; 14, that of nullahs. In 44 villages, Guinea-worm appears occasionally: 24 use the water of nullahs; 12, well water; four, river water; and four, tank water. In 38 villages, Guinea-worm never appears. With one exception, all use river water; 26, the water of

the Mulpurba; nine, that of the Kistnah; two, the river not specified.

Talooka Badamy

Extends from the southern limits of the talooka of Bugulcotta to the Mulpurba river, of primitive formation. The hills chiefly of red quartz rock; where much exposed to the weather, there more resembling sandstone: they range from east to west, and often present a tabular summit nearly as perfect as the basaltic tables of part of the Western Ghauts. I have reports from 18 villages, in nine of which Guinea-worm never occurs, and the immunity is attributed to the excellence of the water: one uses the water of the Mulpurba; one, the water of a river, the name not mentioned; four, well water of a good quality; three, nullah water. In some of the statements it is mentioned, that traders who reside for several months elsewhere, occasionally are affected with the disease. In seven villages, Guinea-worm occurs annually; in four, well water of bad quality is used; in three, tank water; in two the influence of trees growing near the water is alluded to. In two villages, Guinea-worm occurs every second or third year, and is attributed to the quality of the water, that used being from a small well, dependant for its supply on the rain fall; and when that is exhausted, water is brought from a neighbouring village.

Talooka Pursgurh

Forms the south-easterly part of the zillah, joins the talookas of Bugulcotta and Badamy, towards the east; but I am not more minutely informed of its

limits. Of its geological structure, I am not enabled to say much; but have been informed by Dr. Lush, Superintendent of the Botanical Garden, that the Pursgurh hills are of primitive rocks, and that he is of opinion, that the greater part of the talooka must be of similar formation. I have reports from 87 villages, in 67 of which Guinea-worm occurs annually, chiefly in the hot months of March, April, and May: 11 use river water, the name not mentioned, but it must be of small size; 21 use nullah water; 34, well or tank water. In 31, the agricultural classes are said to be more exposed to the disease, which is attributed to the nature of the water, and to constitutional causes. In 23, the poor and badly nourished classes are said to be chiefly exposed. In 13, all castes are said to be equally exposed. In the reports from a great many of the villages, it is stated, that the villages in which river water is procurable, are more exempt; but in the reports from all, some influence is attributed to the state of the constitution. In five, allusion is made to the influence of trees growing near the water, and it is generally stated, that there has been neither increase nor decrease within the recollection of man. In 20 villages of the talooka, Guinea-worm occurs every third or fourth year. In 14, river water is used, and to this their partial immunity is attributed; six use well, tank, or nullah water.

SUMMARY.

1. In four talookas Guinea-worm does not occur, and in all, the upper crust is of laterite

rock. The water used is not specified, but from the physical features of the districts, it must be chiefly that of wells.

2. There are reports from 494 villages, in which Guinea-worm does not occur. Of these 364 are in a district, the upper crust of which is of laterite rock: the nature of the water is not mentioned; but from the physical features of the district, it must be chiefly that of wells. Of the remaining villages, in 109 the water of rivers of considerable size is used, (of these 102 being situated in districts where primitive rocks, chiefly marble and clay-slate, constitute the geological features, and seven in secondary trap districts,) and 21 villages use the water of nullahs, wells, and tanks.

3. Of 991 villages, in which Guinea-worm prevails, 309 are in districts of secondary trap formation; 451 in districts, in which there is a probable alternation of geological structure, but in which the secondary trap formation prevails to a considerable extent; 215 are in districts, in which primitive rocks prevail: in 120 limestone and clay-slate are the principal members of series.

4. *Of the 991 villages, in which Guinea-worm occurs, in 479, the nature of the water is

* In the Medico-Chirurgical Review for April 1833, there is a notice of a memoir on Guinea-worm, by Clot Bey. The disease would appear to be very common in Egypt, chiefly since the conquest of Sennar by Mahommed Ali, and seems to prevail principally in troops drafted from Sennar, Koidofan, and Darfour. Clot Bey is inclined to consider the disease contagious. In Lander's

not stated; but from the physical features of the districts, it must be chiefly of wells: of the remaining villages, 276 use the water of wells; 131 the water of nullahs or tanks, and 58 the water of rivers; but in a great proportion of these villages, in which nullah water or river water is used, the disease is stated to occur every second, third, or fourth year, and not annually.

In the early part of 1833, I marched from Sattara to Sholapoor, through a country of secondary trap formation; and perhaps I cannot better state the result of what inquiries I had an opportunity of making, than by quoting the following extract from a letter, which I addressed at the time to Dr. Macleod, Deputy Inspector of King's Hospitals:—"I conversed with the potails of a number of the villages where we halted, and their conjoined evidence amounts to this, that Guinea-worm occurs in some villages, and not in others; and that the hot season is the period of prevalence. They all stoutly maintain, that in the villages in which river water is used, the disease does not occur. The drinkers of the Beemah and the Seenah waters are strong supporters of this doctrine, and seem almost to look upon the contrary supposition, as a reflection upon the holy character of these

Journal of his Travels to the Niger, vol. ii. page 227, it is stated, that Guinea-worm is common amongst the inhabitants on the banks of the Niger, to the south of Boussa. In Lieutenant Burnes' Travels into Bokhara, it is mentioned, that Guinea-worm prevails to a frightful extent, in the city of Bokhara, and is attributed to the use of bad water.

rivers; and this feeling may probably make them anxious to vest the water with every attribute of perfection. Some, who blame the well water, make a distinction in regard to the kind of well, and say that where there is a good spring, and where the surface of the water is constantly agitated by the large leather bucket raised by bullocks, that the water of such a well will not cause Guinea-worm; but that where the well has small depth of water, and is supplied principally from the rain fall, or where the water is drawn in pitchers or hand buckets, consequently not much agitated, that such are the guilty wells. Some of the potails opined, that this was not an original quality of the water, but one derived from the soil in contact with it; but none went so far as to indicate the soil. Some of the well water that we had, was very bad, with a muddy taste. There are also brackish wells here and there; but the natives do not use them; and consequently do not attribute the worm to them.

About the same time, Mr. Stovell marched from Sholapoor to Baroda, in medical charge of the 9th Regt. Native Infantry. I requested him to inquire regarding the prevalence of Guinea-worm in the districts, through which he passed. He most kindly wrote to me two highly interesting letters on the subject, from which I proceed to make a few extracts. Writing from Ahmednuggur, Mr. Stovell remarks: "With the exception of Neemgaon and Meritchgaon, 84 and 97 miles from Sholapoor, all

the villages suffer more or less from the worm, and are supplied with water chiefly from unmasoned tanks; while at Neemgaon, the villagers drink nullah water, and at Meritchgaon, chiefly tank water. Now why should it be exempt from Guinea-worm, when tank water is drank, the tanks unmasoned, and the geological character of the district is as similar as possible, (as far as I can judge,) to Sholapoor, and the whole extent of country we have passed through?" Again, writing from Baroda, Mr. Stovell observes: "I have now lying before me numerous rough notes taken on the march, and on looking over them, I find in the first place, that with the solitary exception of Wuzzur, a village 92 miles on this side of Nuggur, Guinea-worm is a common complaint in every town and village supplied with well water only; in the second place, in villages supplied chiefly with river or nullah water, but partly also with well water, Dracunculus is also met with, but in a decidedly much less degree; and thirdly, in towns and villages situated on the banks of rivers, and supplied entirely with river water, it is seldom or never seen. Under the second head may be mentioned Kolar, Cassana, Wadanelee, Dindooree, and a few others; under the third, I may class Chandoore and Nassick, on the banks of the Godavery; Chicklee, on the Kavery, and Brachee, on the Taptee. At Chandoore, a Brahmin town, 84 miles on this side of Nuggur, where the inhabitants drink solely the water of the Godavery, I

was told, that the worm was never seen. I was told the same thing at the holy city of Nassick, which is also watered by the Godavery; but the Brahmins accounted for the exemption, by the philosophical assertion, that the river was too pure and sacred to breed the worm. At Surat, Dracunculus is by no means uncommon; at Broach on the Nerbudda, I regret to say, that I made no inquiries; but it prevails in all the villages from Surat to Baroda, and well water is the common drink.

"The geological character continued, as far as I could judge, the same the whole way from Sholapoor to near Surat; whence to this place it has gradually changed into a deep rich alluvial soil, which here abounds with water in every spot, at the depth of only a few feet. With regard to the Gordius, I have not met with a single being, who appears to have the slightest idea of its existence."

Zillah Cuddapah

Is very extensive, ranging north and south from about 30 miles to the south of the Kistnah, and 70 to the south of the Pennaar river. There is much variety in its geological structure, and it probably has not yet been well described. The prevailing rocks are clay-slates, limestone, and sandstones, resting on the older members of the primitive series.

The situation of the greater number of the talookas will be seen in a good map; and as I cannot be more minute in regard to their respec-

tive limits, I shall content myself with stating the substance of the different reports relative to the prevalence of Guinea-worm.

Cuddapah Collectorate.

Talooka Doopand.

The names of eight villages are mentioned, in which Guinea-worm prevails to a great extent, attributed to a vegetable called Inhat, and to the use of the water of wells sunk in calcareous tufa, which water is generally bitterish; the soil of the calc-tufa is always barren.

Talooka Budwail.

Nine villages named, in which the disease occurs extensively, attributed to the wells being sunk in calc-tufa; they do not seem to be acquainted with the system of extraction, and only refer, in their list of remedial means, to fomentations of leaves, and applications of heated cow-dung.

Talooka Cumbun.

Guinea-worm abounds in this talooka. The names of 12 villages are mentioned in which it is very prevalent, chiefly from April to July, attributed to bad water, and the bilious state of the constitution.

Talooka Poolsburdalah.

The names of 15 villages are mentioned in which Guinea-worm prevails, chiefly in the months of April, May, and June. It is attributed to the heat, the bilious state of the constitution, and to the use of the vegetable called Inhat.

Talooka Dhoor.

Five villages mentioned in which Guinea-worm prevails to a considerable extent, viz. to the extent of 30 or 40 individuals in a village, in the hot season. It is attributed to bad and brackish water.

Talooka Chitwail.

Guinea-worm occurs occasionally amongst those who reside in this talooka, but is more frequently seen in people, who come from the westward, for purposes of trade.

Talooka Chennoor.

Five villages mentioned in which Guinea-worm occurs, attributed to heat, bile, water from wells sunk in calc-tufa, and to the use of the vegetable called Inhat.

Talooka Camalapoor.

Seven villages mentioned in which Guinea-worm prevails much ; they are to the southward of the river. Five named, in which Guinea-worm occurs more moderately; attributed to the water of calc-tufa wells.

Talooka Jamulmudagoo.

Guinea-worm occurs in many villages. The names of five are mentioned in which it is most prevalent; it is attributed to the use of well water.

In the Rajah of Punganore's territory, in the talookas Gurrumcoonda, Ryachooty, and Madunpilly, there is no Guinea-worm.

SUMMARY.

Of nine talookas, in which Guinea-worm occurs, in four allusion is made to the water being deteriorated by the influence of a soil of calc-tufa. In some allusion is made to a particular kind of vegetable, and to a bilious condition of the constitution, as predisposing to the disease.

Through the kindness of my friend Mr. G. Cumming, Surgeon of the zillah of Cuddapah, at the time of my visit to that station in the latter part of 1833, I am enabled to subjoin the following table of admissions of Guinea-worm into the Hospital of the Zillah Jail, for the years 1832 and 1833. The average number of Prisoners in the jail is 1,100.

Months.	1832.	1833.	
January, ...	1	0	
February, ...	7	0	
March, ...	5	0	
April, ...	3	3	
May, ...	1	4	This information I obtained in the latter part of August, 1833, up to which date only the table extends.
June, ...	0	9	
July, ...	0	6	
August, ...	0	0	
September, ...	1		
October, ...	0		
November, ...	0		
December, ...	0		
Total,..	18	22	

Mr. Cannan, in medical charge of the 17th Madras Native Infantry, cantoned at Cuddapah, in 1833, kindly communicated to me the following information relative to the occurrence of Guinea-worm in the corps under his charge, which

I take the liberty of stating in his own words. "During the year 1832, there were no admissions of Guinea-worm into the Hospital of the 17th; during the present year (1833), none till the month of April, when five cases were admitted; in the month of May, two, and in July, one. The whole of these were recruits enlisted at Cumbun. The number of recruits obtained from thence was between 80 and 90; they arrived here during the months of March and April. The 17th Regiment left Mangalore on the 30th November, 1832, marched by the route of the Bessley Ghaut, Chinraypatam, Bangalore, Gurrumcoonda, and Ryachooty, to Cuddapah, where it arrived on the 31st January, 1833.

"From all I heard and saw at Mangalore*, I should say, that the disease was not at all common there; only one case occurred in the 17th Regiment, during the whole time that it was cantoned there, a period of more than three years. I may remark, that owing to the dearness of grain at Cumbun, most of the recruits obtained from the place were attenuated, of a half-starved appearance: whether or not this had any connection with the disease, may be a question, as poor living is well known to favor the production of other animals in the human body."

* I believe that the crust of laterite overlies the older primitive rocks here, as in the Southern Concan.—C. M.

For the following table, shewing the admissions of Guinea-worm into the Hospital of the 4th Light Dragoons, during the years 1833 and 1834, I am indebted to Dr. Perston; it may be looked upon as a continuation of the table published with my former paper.

Years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Of these were re-admissions.
1832, ...	0	0	0	0	0	0	0	0	0	0	1	3	4	2
1833, ...	1	2	3	7	3	1	3	1	1	3	0	1	26	17
1834, ...	0	1	2	6	31	29	20	13	7	3	1	0	113	56

To the kindness of Mr. Kemball, President of the Bombay Medical Board, I owe the following table, which shews the number of admissions of Guinea-worm into the Military Hospitals of the different stations, on the Bombay Presidency, for each month of the years 1832 and 1833. It has been compiled from the records of the Medical Board Office, and its accuracy may be depended on.

Table No. 1.

1832.

Divisions.	Presidency Division.										Northern Deccan Division.										Southern Deccan Division.										North-west Division of Guzerat.						Total of each month throughout the Army, 31,933.
Kind of Troops.	Europeans.			Natives.							Europeans.	Natives.									Europeans.	Natives.									Europeans.	Natives.					
Average Strength.	287	878	29	2747	894	190	1004	321	1400	1761	1665	616	638	1605	337	1680	1611	858	627	864	118	667	962	1592	1461	921	,,	,,	,,	89	1399	1736	534	1771	771	
Stations in the different divisions.	Bombay.	Colaba.	Severndroog.	Bombay.	Bherondy.	Tannah.	Surat.	Broach.	Baroda.	Dapoolee.	Poonah.	Kirkee.	Ahmednuggur.	Poonah.	Seroor.	Ahmednuggur.	Malligaum.	Asseerghur.	Candeish.	Belgaum.	Sholapoor.	Belgaum.	Dharwar.	Kalladghee.	Sholapoor.	Sattarah.	Himgaul.	Warrer.	Rain Ghaut.	Bhooj.	Deesa.	Ahmedabad.	Kaira.	Rajcote.	Bhooj.	
January, ...	0	0	0	3	0	0	0	0	1	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	11
February, ...	0	2	0	2	1	0	0	0	0	0	0	1	0	2	0	4	3	0	0	0	0	0	3	0	10	1	0	0	0	0	0	0	0	0	0	29
March, ...	2	0	0	8	0	0	3	0	2	1	0	5	0	6	2	7	8	0	0	0	0	0	1	2	18	2	0	0	0	0	0	0	1	1	0	69
April, ...	2	0	1	20	0	2	3	1	0	1	5	7	0	5	2	5	10	0	0	1	0	0	1	0	31	6	0	0	0	0	0	0	0	0	0	103
May, ...	2	2	0	10	3	1	2	0	3	2	6	57	2	8	6	13	6	0	0	0	0	0	4	1	46	1	0	0	0	0	0	1	1	1	0	178
June, ...	2	2	0	14	5	0	1	0	4	0	2	64	0	11	2	14	8	0	0	0	1	0	2	2	59	7	0	0	0	0	0	1	0	0	0	201
July, ...	2	4	0	5	6	2	4	0	1	1	0	48	1	15	1	7	4	0	0	0	1	0	2	0	54	5	0	0	0	0	1	2	0	0	0	166
August, ...	0	4	1	8	3	0	4	0	1	0	0	14	0	20	0	5	9	0	0	1	1	0	1	1	39	3	0	0	0	0	1	0	0	0	0	116
September, ...	0	3	0	5	3	0	3	2	6	1	0	3	0	19	0	0	1	0	2	0	0	0	0	0	19	9	0	0	0	1	0	0	1	2	0	80
October, ...	1	4	0	4	5	1	1	3	5	1	0	2	0	8	1	0	4	0	0	0	1	0	1	0	11	7	0	0	0	0	0	0	2	1	0	63
November, ...	0	1	0	0	1	0	1	1	4	1	0	2	1	7	0	1	4	0	0	0	1	0	1	0	5	2	0	0	0	0	0	0	2	0	1	36
December, ...	0	0	0	4	0	0	0	2	0	4	0	3	0	4	0	0	2	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	0	23
Total, ..	11	22	2	83	27	6	22	9	27	12	13	206	4	106	14	57	61	0	2	2	5	0	17	6	295	44	0	0	0	1	2	4	7	7	1	1075

TABLE No. 1.—*continued.*

1833.

Divisions.	Presidency Division.										Northern Deccan Division.										Southern Deccan Division.										North-west Division of Guzerat.						Total of each month throughout the Army, 33,030.
Kind of Troops.	Europeans.			Natives.							Europeans.	Natives.									Europeans.	Natives.									Europeans.	Natives.					
Average Strength.	878	798	19	2743	577	181	992	342	2006	1602	1574	669	584	1623	475	1558	1683	817	655		832	94	1135	896	895	2285	794	,,	228	31	80	1351	1696	530	1323	1064	
Stations in the different divisions.	Bombay.	Colaba.	Severndroog.	Bombay.	Bherondy.	Tannah.	Surat.	Broach.	Baroda.	Dapoolee.	Poonah.	Kirkee.	Ahmednuggur.	Poonah.	Seroor.	Ahmednuggur.	Malligaum.	Asseerghur.	Candeish.		Belgaum.	Sholapoor.	Belgaum.	Dharwar.	Kalladghee.	Sholapoor.	Sattarah.	Himgaul.	Warrer.	Rain Ghaut.	Bhooj.	Deesa.	Ahmedabad.	Kaira.	Rajcote.	Bhooj.	
January,	0	0	0	2	0	0	0	1	1	2	0	1	0	0	0	0	1	0	0		0	0	1	1	0	4	0	0	0	0	0	0	0	0	1	0	15
February,	1	1	0	2	0	0	0	0	0	0	1	0	0	2	6	1	0	0	0		0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	17
March,	1	2	0	9	2	1	1	0	3	0	0	3	0	0	15	1	1	0	0		0	1	1	3	1	11	0	1	0	0	0	0	0	0	0	0	57
April,	0	4	0	19	1	3	1	2	13	1	1	0	0	7	19	4	1	0	0		0	0	0	4	0	8	2	0	0	0	1	0	1	0	2	1	95
May,	3	1	0	6	1	0	2	1	3	1	1	7	0	29	4	3	1	2	1		0	0	2	9	4	7	0	0	0	0	0	1	5	3	0	1	98
June,	3	0	0	12	6	1	0	3	12	1	1	3	2	25	3	1	1	0	1		1	0	0	6	2	13	0	0	1	2	0	0	14	0	1	0	115
July,	0	2	0	9	11	8	0	4	14	0	0	1	1	16	3	2	1	0	3		0	0	0	5	0	9	1	0	1	1	0	2	8	0	0	0	103
August,	1	3	0	43	4	1	0	0	7	0	0	3	2	14	3	3	4	1	2		0	0	0	5	1	8	2	0	0	0	0	0	2	0	1	0	110
September,	1	6	0	20	5	3	0	3	5	0	0	1	1	25	7	4	2	0	0		0	0	0	5	0	12	3	0	0	1	0	0	2	0	1	0	107
October,	0	0	0	24	4	0	0	0	9	2	0	1	0	37	10	5	1	0	0		0	0	1	0	1	8	3	0	0	1	0	0	1	0	4	0	112
November,	0	0	0	9	2	0	0	0	2	0	0	3	1	12	4	2	4	0	1		0	0	0	1	0	2	1	0	0	0	0	0	1	0	1	0	46
December,	0	0	0	8	0	0	0	0	1	0	0	1	0	14	2	4	2	0	0		0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	35
Total,	10	19	0	163	36	17	4	14	70	7	4	24	7	181	76	30	19	3	8		1	1	6	41	10	84	12	1	2	5	1	3	34	3	11	2	909

NOTE.—The following Tables have been calculated from the above.

Table No 2.

Table shewing the Average Annual Admissions of Guinea Worm per Cent. of the Troops, European and Natives, of the different Stations and Divisions of the Bombay Army, for the years 1832 *and* 1833, *with the Mean of these two years.*

			1832	1833	Means.	Remarks.
Presidency Division.	Europeans.	Bombay,	3.87	1.13	2.50	
		Colabah,	2.50	2.38	2.44	
		Severndroog,	6.89	0.0	3.44	
	Natives.	Bombay,	3.02	5.94	4.48	
		Bherondy,	3.02	6.23	4.62	
		Tannah,	3.15	9.39	6.27	
		Surat,	2.09	0.40	1.24	
		Broach,	2.80	4.09	3.44	
		Baroda,	1.92	3.48	2.70	
		Dapoolee,	0.67	0.43	0.55	
		Per cent. of the division,	3.01	3.34	3.17	
Northern Division of the Deccan.	Europeans.	Poonah,	0.78	0.25	0.51	
		Kirkee,	33.44	3.58	17.56	* The average of three years.
		Ahmednugger,	0.60	1.19	0.89	
	Natives.	Poonah,	6.66	11.15	8.90*	
		Seroor,	4.15	20.21	12.18	
		Ahmednugger,	3.39	1.92	2.65	
		Malligaum,	3.78	1.12	2.45	
		Asseerghur,	0.0	0.36	0.18	
		Candeish,	0.31	1.22	0.76	
		Per cent. of the division,	5.90	4.55	5.22	
Southern Deccan Division.	Europeans.	Belgaum,	0.23	0.12	0.17	
		Sholapoor,	4.23	1.06	2.64	
	Natives.	Belgaum,	0.0	0.52	0.26	
		Dharwar,	1.75	4.57	3.16	
		Kulladghee,	0.31	1.11	0.71*	
		Sholapoor,	20.19	3.67	11.93	
		Sattarah,	4.77	1.51	3.14	
		Hingaul,	0.0	0.0	0.0	
		Warrer,	0.0	0.87	0. 5	
		Rain Ghaut,	0.0	16.12	0.0	
		Per cent. of the division,	3.14	2.95	3.04	
North-west Division of Guzerat.	Europeans.	Bhooj,	1.12	1.25	1.18	
	Natives.	Deesa,	0.14	0.22	0.18	
		Ahmedabad,	0.23	2.00	1.11	
		Kaira,	1.31	0.56	0.93	
		Rajcote,	0.40	0.83	0.61	
		Bhooj,	0.12	0.18	0.15	
		Per cent. of the division,	0.55	1.00	0.77	
		Average per cent. of the army,	3.36	2.75	3.05	

Table No. 3.

Table shewing the Comparative Monthly Average Admissions of Guinea Worm per Cent. of the Bombay Army, for the years 1832 and 1833, with the resulting mean of the two years.

Months.	1832.	1833.	Mean.
January,....	0.034	0.045	0.039
February,...	0.090	0.051	0.070
March, ...	0.216	0.172	0.194
April, ...	0.332	0.287	0.304
May, ...	0.557	0.296	0.426
June,.....	0.642	0.345	0.493
July, ...	0.519	0.308	0.413
August,.....	0.366	0.333	0.349
September,..	0.25	0.323	0.286
October, ...	0.197	0.339	0.268
November, ..	3.110	0.139	0.125
December,..	0.072	0.105	
Annual average per cent. of the Bombay Army.	3.377	2.743	3.055

Mahabuleshwur Hills, February, 1835.

Table No. 4.

Table shewing the Comparative Average Admissions of Guinea Worm of Europeans and Natives per Cent. of the Bombay Army.

	1832.	1833.	Mean of two years.
Europeans,..	5.131	1.201	3.216
Natives,....	3.024	3.025	3.024

NOTES ON THE DRUGS

CALLED

MISHME TEETA AND PUCHA PAT.

BY N. WALLICH, M. D.

Presented Aug. 1835.

About a year ago I received from Captain Jenkins, Agent to the Governor General on the N. E. Frontiers of Bengal, a small supply of a medicinal root, which he informed me was in great repute in Assam, and among the tribes inhabiting the adjoining countries. I have since been able, through the kindness of Lieut. Charlton, of Suddeya in Upper Assam, to determine with certainty the nature of the plant which yields this root; and I have now the pleasure to submit some notes on the subject to the Medical and Physical Society, together with the result of the experiments made by my valued friend Mr. Twining, to ascertain the properties and medicinal use of the drug.

Mishme Teeta is the name by which this drug is designated among the Mishmees and Lamas in the mountainous regions bordering upon Upper Assam. The Chinese call it *Honglane*. Among these three nations, it is in great estimation, and in universal use as a powerful tonic and stomachic.

Quantities are sent down to Assam in neat little baskets, with open meshes, made of narrow slips of ratan, or some such material, and measuring 3 to 4 inches in length by $2\frac{1}{2}$ in breadth and $1\frac{1}{2}$ in width. Each basket contains about an ounce of small pieces of the root, from 1 to 3 inches long; they are nearly cylindric, uneven, scabrous, more or less curved, of a greyish brown color, and varying in thickness from the size of a crow-quill, to double that diameter. The root is perfectly dry and brittle; occasionally a few fibrillæ are issuing from one end; the inside is hard, somewhat cellular, the outside of a dingy yellow color. The taste is intensely and purely bitter, very lasting and with only a very slight aroma; on mastication, the root tinges the saliva yellow; its interior is bright-yellow or gold-colored. It possesses no smell whatever.

In March last, I received from Lieut. Charlton some fresh roots with leaves attached, which he had obligingly procured for me from the hills. They are still alive, and in a healthy condition, notwithstanding the great disparity of climate which they have to endure in Bengal, chiefly in regard to temperature. The leaves have withered away; but fresh roots are at the present time making their appearance. I am therefore not without some hopes of preserving this valuable plant in the Honorable Company's Botanic Garden; or at any rate of introducing it hereafter into localities where it may have a better chance of thriving. I have subsequently had the pleasure of ob-

taining from the same liberal source two incomplete specimens of the inflorescence, together with unripe fruit, produced by the plants at Suddeya. These are the materials from which the following brief notes have been taken.

Coptis Teeta, foliis trisectis, segmentis petiolatis, lobato-pinnatifidis, lobis incisis acutissime setaceo-serratis ; scapo paucifloro, bracteis foliaceis lineari-tripartitis.

Radix subcarnosa, multiceps, fibrillosa, intus luteo-aurea. Surculus . . . . . ? Folia erecta, glabra, longe petiolata, texturâ firmâ et rigidiusculâ, habituque frondem filicis cujusdem dorsiferæ referentia ; circumscriptione ovato-cordata, attenuato-acuminata, quadripollicaria ; segmenta petiolo partiali $\frac{1}{2}$ pollicari suffulta, lateralia semicordato-ovata, extus fere bipartita, pollices duos longa ; intermedium duplo majus, paullo longius petiolatum, attenuatum in acumen, basi cuneatâ subdecurrente : omnia inciso-pinnatifida, lobis obtusis, serraturis latiusculis setâ terminatis, reticulata, nervis supra puberulis, venis extimis curvato-furcatis. Petiolus gracilis, longitudine circiter folii, basi dilatatus. Scapus teres, erectus, tenuis, striatulus, folia longitudine æquans, apice gerens flores paucos (vix ultra tres) parvos, alternos, pedunculatos. Sepala oblongo-lanceolata, attenuata, acuta, albida, parallele venulosa, glabra, unguem longa, fugacissima. Petala linearili-gulata, obtusa sepalis triplo breviora, planiuscula (?) Stamina pistillaque plura ; antheræ planorotundatæ, albidæ. Carpella immatura membra-

nacea, 3-5-ovulata, breve stipitata, stylo terminata carnoso subcylindrico, æquante, adscendente-recurvato, intus (stigmate) scabrido. Bractea sub singulo pedunculo foliacea, angusto-linearis, serraturis setaceis marginata, infima tripartita. Pedunculi fructiferi elongati.

Coptis belongs to the subdivision of Ranunculaceæ, called Helleboreæ. It consists of three species: namely, *C. Teeta*, and the two following.

C. trifolia, Salisb. in Linn. Trans. vol. viii. p. 305; Bigelow, Amer. Med. Botany, vol. i. p. 60, t. 5; Decand. Syst. Veg. vol. i. p. 322 et Prodr. vol. i. p. 47; Lodd. Bot. Cab. 2. n. 173. *Helleborus trifolius*, Linn. Amoen. Acad. vol. ii. p. 355. tab. 4, fig. 18. *Anemone Groenlandica*, Müll. Flor. Dan. vol. iv. p. 5. tab. 166.

This is a native of the most northern parts of Europe and of North America, and is quite distinct from our plant by its rounded obovate leaflets.

C. asplenifolia, Salisb. loc. cit. p. 306; Pursh. Flor. Boreal. Amer. vol. ii. p. 39; Decand. locis cit.; Smith in Cyclop. Rees, vol. xix. ad calcem vocis Isopyri, quo teste *Thalictrum japonicum*, Thunb. in Act. Soc. Linn. vol. ii. p. 337, et *Didynamista Salviæ similis*, Ejusd. Flor. Japon. p. 364, num. 43 (inter plantas obscuras) huc pertinent.

A native of the west coast of North America, where it was found by my venerable friend Mr. Archibald Menzies, who is, I believe, the only survivor of the party that accompanied Captain Vancouver in his voyage round the world. It has

also been found in Japan, according to Thunberg. The plant comes near to Coptis Teeta, agreeing with it in the fern-like appearance of the leaves, from whence it derives its name, and which indeed at first deceived me into a supposition of ours being a member of that tribe.

The nearest allied genus is *Isopyrum*, of which Mr. Royle's very valuable and important work, Illustrations of the Botany of the Himalaya, contains descriptions and figures of two species; namely *Isopyrum grandiflorum* Fischer, Royle Illustr. p. 55, t. 11. fig. 3, from Kunnawur; and *I. microphyllum* Royle, loc. cit. fig. 4, (tab. 1 being quoted by mistake in both instances for tab. 11,) from Buddrinath, where it was found by the plant-collectors employed under me.

As it is very probable that the medicinal properties of Mishme Teeta will be found to agree with those of the *Gold-thread* of North America (Coptis trifolia), so called from the color of the root, I extract in this place the following interesting account from Professor Bigelow's work quoted above, p. 62.

" The root of this plant is a pure intense bitter, scarcely modified by any other taste. In distillation it communicates no decided sensible quality to water. The constituent with which it most abounds is a bitter extractive matter, soluble both in water and alcohol. It seems destitute of resinous or gummy portions, since the residuum from an evaporated solution in alcohol is readily dissolved in water, and vice versâ. It is devoid

of astringency when chewed in the mouth, and it gives no indication of the presence of tannin or gallic acid when tested with animal gelatin, or with sulphate of iron. The abundance of the bitter principle is evinced by the acetate of lead and nitrate of silver, both of which throw down a copious precipitate. The sulphuric, nitric, and muriatic acids occasion no change, and the muriate of tin gives only a slight precipitate, after some time standing.

" Of this article larger quantities are sold in the druggists' shops in Boston, than of almost any indigenous production. The demand for it arises from its supposed efficacy as a local application in aphthous, and other ulcerations of the mouth. Its reputation, however, in these cases is wholly unmerited, since it possesses no astringent or stimulating quality, by which it can act on the ulcerated spots; and where benefit has attended its use, it is doubtless to be ascribed to other articles possessing the above properties, with which it is usually combined.

" As a pure tonic bitter, capable of strengthening the viscera, and promoting digestion, it is entitled to rank with most articles of that kind now in use. Its character resembles that of Gentian, Quassia, and Columbo, being a simple bitter without aroma or astringency. The tincture, made by digesting half an ounce of the bruised root in eight ounces of diluted alcohol, forms a preparation of a fine yellow colour, possessing the whole bitterness of the plant. I have given it in various in-

stances to dyspeptics and convalescents, who have generally expressed satisfaction from its effects, at least, as frequently as from other medicines of its class. A tea-spoonful may be taken three times a day. In substance it rests well on the stomach in doses of ten or twenty grains. It is, however, difficult to reduce to powder, on account of the tenacity of its fibres."

I shall now advert to another vegetable substance which, although most extensively used by the natives of this country, has hitherto continued one of the problems in our Indian Materia Medica. The drug, to which I allude, is called in Bengalee as well as in Hindee, *Puchá Pát*, and is found in every bazar almost throughout Hindustán. My esteemed friend Baboo Radhakant Deb informs me, that " there exists no Sanscrita name for this leaf, which is largely imported by Mogul merchants ; that it is used as an ingredient in tobacco for smoking, and for scenting the hair of women, and that the essential oil is in common use for imparting the peculiar fragrance of the leaf to clothes among the superior classes of natives." I believe that the people of the peninsula are peculiarly fond of this perfume, as are also the Roman Catholic inhabitants of this country generally.

Having ascertained, on my return from Europe two years ago, that a large quantity of what appeared to be the same drug as that commonly sold in the bazars under the name of Puchá Pát had been imported from Penang, I requested Mr.

George Porter, late of that island, and formerly in charge of the botanical establishment there, to favor me with an account of the article, and also, if possible, with some growing plants of it. In February last year (1834), I had the pleasure to receive from him several plants, which I have succeeded in multiplying by cuttings, and which appear to thrive remarkably well in this garden. Mr. Porter has furnished me with the following memorandum: "The Puchá Pát grows perfectly wild at Penang, and on the opposite shore of the Malay Peninsula, in Wellesley province. The Arabs use and export it more than any other nation. Their annual pilgrim ship takes up an immense quantity of the leaf. They use it principally for stuffing matrasses and pillows, and assert, that it is very efficacious in preventing contagion and prolonging life. It requires no sort of preparation, being simply gathered and dried in the sun; too much drying, however, is hurtful, in as much as it renders the leaf liable to crumble to dust in packing and stowing on board. In Penang it sells at the rate of a dollar and a quarter, to a dollar and a half, per pekul. In Bengal, some which was sent from thence several years ago, sold at 11 Rupees 8 annas per maund. At times the price is much higher. The last investment sold so low as six rupees only per maund. It has not been seen in flower." So far Mr. Porter's memorandum.

The Puchá Pát plant is evidently of the family of Labiatæ. It forms a shrub (in the Botanical Garden) of two to three feet in height. The obtusely

four-cornered branches and the leaves are juicy, and somewhat fleshy, and covered, especially the inferior surface of the latter, with a great deal of soft, pallid pubescence, which gives the plant a greyish appearance. All the young parts are densely villous. The leaves are opposite, petioled, ovate, obtuse, grossly and obtusely lobato-crenate, measuring from two to four inches; the lowermost on the branches are subcordate, all the others are cuneate, and entire at the base; the upper surface slightly rugose; under surface pallid, with very thick rib and nerves, and largely reticulated veins.

None of the individuals in this garden have hitherto shown any disposition to blossom; owing perhaps to the plant being so easily multiplied by division. All the green parts, on being rubbed, emit the peculiar smell of the drug sold under the name of Pucha Pát, which is also very like our shrub in the form, margins, and surface of the leaves.

I should have mentioned above, that the Baron Hügel informs me, that he has found a plant growing wild at Canton, which closely resembles that from Penang cultivated in this garden.

Whether *Marrubium odoratissimum Betonicæ folio*, J. Burm. Thesaur. Zeylan. p. 153, tab. 71, fig. 1, (*Marrubium Indicum*, N. L. Burman, Flor. Ind. p. 127,) be our plant or not, it is difficult to say; but it strikes me that there is at least a considerable affinity between them.

H. C. Botanic Garden, 6th June, 1835.

NOTE ON THE MEDICINAL PROPERTIES OF THE ROOT OF THE MISHME TEETA.

By W. Twining, Esq.

The powder of this root is of an intensely bitter taste, which is accompanied with a slight degree of a peculiar aroma. The sensation produced in the mouth subsides but slowly, and is more pleasant than any simple bitter. Judging from the taste, it does not possess much astringency; and this opinion is confirmed, by finding that neither the tincture nor the infusion is much affected by the solution of sulphate of iron. Four hundred and eighty grains of the root, when coarsely powdered, and macerated in proof spirit for five days, were found to have lost 180 grains. The residue of the above tincture, when dried, amounting to 300 grains, was macerated for 30 hours in distilled water, and only 26 grains were found soluble in water; as the residuum, when dried, weighed 174 grains. The maceration in water was not continued longer than 30 hours, because fermentation had commenced, the weather being very hot at the latter end of May.

If we may be allowed to pronounce an opinion after trying the effects of the powder, and of the tincture, in 17 persons, this medicine is highly deserving of attention. The persons on whom the trials were made were chiefly patients who were suffering from different degrees of debility, after the subsidence of acute diseases; and one was a patient who was of a scrofulous habit, and reduced to the lowest stage of debility, by external suppuration of great extent. The effects of this medicine as a bitter, and its influence in restoring appetite and increasing the digestive powers, are very remarkable, and it may be said to possess all the properties of our best bitter tonics. It has seldom appeared to have the effect of constipating the bowels; but in this and many other respects, I consider further trials necessary to ascertain fully the medicinal properties of this drug.

Calcutta, 5th June, 1835.

CASE OF SNAKE BITE

SUCCESSFULLY TREATED BY VENESECTION.

By T. J. SMITH, Esq.

OF MADRAS.

Presented Oct. 3rd, 1835.

June 30th, 1835.—At 1. 30 P. M., I was called to see a strong, robust cooly, said to have been bitten by a Cobra Capella. On inquiry, I found that he had incautiously thrust his hand into a bag containing a fresh caught snake, which immediately flew at him, and bit him several times on the back of his hand. This happened about a quarter of an hour previously to my seeing him: at that time he was perfectly insensible; breathing quick and hurried; P. small, compressed, and irregular, 30 beats; S. cold; pupils firmly contracted; frothing at the mouth. A ligature was placed tightly above the belly of the biceps muscle.

Liquor Ammon. ʒ ii. Aquæ ℥ i. H. statim.

Wounds cauterized.

1. 40. No change; hand and arm swelling.

Rept. Liq. Ammon.

1. 45. Perfectly insensible, torpid, and heavy; no change; arm and hand greatly swollen. I

opened the median cephalic vein, and allowed the blood to flow. It is dark and highly venous.

1. 55. A large quantity of blood has been abstracted, it is now of a more natural hue, about ʒ xv. The circulation seems to be relieved. P. 60, softer, and fuller; S. warm. Has twice vomited a green fluid, (some native remedy taken before I saw him.) Pupils as before. No decided improvement.

Liq. Ammon. ʒ ii. Brandy ʒ ss. statim.

2 P. M. Sinking; Respiration becoming hurried.

Rept. Haust. Liq. Ammon. ʒ ii. Brandy ʒ ss.

2. 5. Improving. P. soft, 60; great irritability of stomach.

Tinct. Op. m. xv. Liq. Ammon. ʒ ii.

Brandy ʒ ss. Aquæ ʒ ss. H. statim.

The wounds to be brushed with Nitric Acid.

2. 15. No return of vomiting. P. 60, intermitting, but tolerably full; slight appearance of stertor, with occasional convulsive twitchings. His head was placed over the bed, and freely douched with chatties of cold water; it seems to rouse him slightly.

2. 20. He is sinking; skin cold; P. small and hurried, intermitting.

Lini Ammon. Capiti Rasi.

Liq. Ammon. ʒ iv. Brandy ʒ iv. Aquæ ʒ i. H. statim.

2. 30. Not so cold, is slightly rallying. P. 52, highly intermitting, and irregular. S. warm.

Liq. Ammon. ʒ ss. Brandy ʒ iv. Aquæ ʒ i. H.

Salt and mustard sinapismus.

2. 35. Has just vomited, and rejected the draught. P. small and compressed. Skin warm.

Ammon. Carb. ʒ ss. Aquæ ʒ i. H. statim.

2. 45. Hand greatly swollen, to be bathed in hot water, jactitation and restlessness. P. 60, small, soft, and intermitting.

Rept. Haust.

2. 55. Slightly convulsed. Sk. cold. P. again compressed, intermitting, and small, 60.

Rept. Ammon. Carb. ʒ ss. Brandy ℥ ss. H.

3. P. M. The wounds have again burst out bleeding, blood dark, grumous, and highly venous; breathing quick and hurried. P. 30, small and compressed. I opened the same vein, the blood flowed at first dark and venous; after the abstraction of about ℥ x. it became clear and natural. P. now 68 and full. He is slightly sensible, and expresses annoyance at having his hand immersed in hot water; pupils not relieved.

3. 15. Lying quiet. S. warm; perfectly insensible; no stertor; breathing regular.

3. 25. P. again small, hurried, and compressed; he is restless.

Ammon. Carb. ʒ ss. Brandy ℥ ss. statim.

Acid Nitric nuchæ.

2. 30. Appears sensible of the Nitric Acid burning him, and of his mouth being sore from the Ammonia; he shows this by his movements, indicative of pain and uneasiness, being unable to speak. Respiration regular.

3. 40. P. again becoming small and compressed; arm painful, much swollen, and conjested. I

re-opened the vein, and took about ʒ viij. of dark venous blood, which seemed to relieve him. Is now able to speak, and complains of pain and burning about his stomach. P. 70, soft, and only slightly intermittent.

4 P. M. Appears more sensible, opens his eyes; pupils becoming sensible; complains of giddiness and pain in his arm. P. soft; he is lying quiet; is heavy and torpid.

Weak Brandy and Water.

4. 45. Is now perfectly sensible; is able to converse, but complains of head-ache and giddiness.

6 P. M. Arm greatly swollen, painful, and tense; complains of sore throat; sleeps constantly.

Cataplasma panis.

Calomel gr. x.

July 1*st*.—Passed a tolerable night. T. moist. P. sharp and intermittent. Arm swollen and painful; slight giddiness.

Haust. Sennæ ʒ iv. Magn. Sulph. ʒ ss.

Calomel, gr. v. Ant. Pulv. gr. v. 4ta quaque hora.

2*nd*.—Slight heat of skin and fever. P. regular. B. open. Hand and arm greatly swollen and tense: no sore throat or pain about the epigastrium.

Cataplasma panis carpo.

Omitt. Calomel et Pulv. Antim.

3*rd*.—Wounds in his hand sloughing; no fever to-day.

Contr.

5th.—About the wrist, his hand is much swollen. I made an incision through the skin and cellular membrane, and let out a small quantity of pus: the tendons look sloughy and unhealthy.

Bandage to the arm.

Cataplasma panis carpo.

7th.—The skin on the back of his hand is sloughing, insensible, and greatly swollen, with a fœtid discharge.

Contr.

10th.—I dissected off the entire skin and cellular membrane from the back of his hand, leaving the tendons perfectly clean.

Ung. Cetacei.

15th.—Tendons covered with healthy granulation. Constitution not in any way suffering. He is weak, but in other respects quite well.

Contr.

Pulv. Aluminis Ustæ.

20th.—Healing rapidly.

25th.—Nearly well.

Aug. 3rd.—The sore on the back of his hand is now so nearly well as to enable him to return to his family. He is slightly fallen off in flesh, but is in other respects quite well.

Few cases are so well authenticated in all its circumstances as this. The history of the accident is simple. A professed Snake-catcher caught the snake in a compound close to the house in which I was residing; as soon as caught, he put it into a bag. In a similar bag, he had a common green snake. The cooly by mistake put his hand into

the wrong bag, and was immediately bitten by the Cobra. There were four distinct marks on the back of his hand at nearly equal distances from each other : he says the snake bit him twice before he had time to withdraw his hand. I have the snake ; it is 4 feet 6 inches long, with the spectacles fully and clearly marked on the back of the neck. I dissected the head, and found one fang entire and uninjured, and one broken, but remaining in sitû.

Bangalore, Aug. 6, 1835.

AN ACCOUNT OF SCURVY,

AS

IT APPEARED AT NUSSERABAD.

By D. MACNAB, Esq.

Presented Nov. 1st, 1834.*

The troops at this station have unquestionably suffered severely, for the last eight or ten months, from Scurvy—a disease which, I suppose, has been rarely, if ever seen to arise under circumstances in appearance so little calculated to produce it ; at least, I do not know that our previous acquaintance with its history can furnish any parallel example. Few of those attacked have found relief in this climate ; and owing to the number of men which it was found absolutely necessary to send away on Medical Certificate, the strength of corps has, in the mean time, been sadly reduced, even to an extent not a little onerous and fatiguing to those left to perform the accumulated duties. Thus have our measures, unavoidably perhaps, increased the very evil which we had designed to remedy, at any rate in part.

* This and the following paper upon the same subject were written in consequence of a letter addressed by J. Hutchinson, Esq. Secretary to the Medical Board, to the Superintending Surgeon of the Neemuch circle, calling upon that gentleman to afford any information on this matter which he could obtain, (vide Appendix, No. 3.)

This disease has proved an exceedingly intractable one. I wish I were more capable of complying with your invitation on the subject ; but as it is, I have ventured to cast a hasty retrospect over the various phenomena which it has exhibited since its eruption at this place ; and if my observations have been too carelessly made, as I am but well convinced will be evidently the case, I must trust to your indulgence. Others, no doubt, have followed the complaint with more observant eyes, and from the talent which most of them can bring in aid of the investigation, I feel somewhat consoled, even in the conviction thence arising, that my own very imperfect contributions will therefore be the less needed. Still, however, I believe, that all the Medical Officers have experienced no small difficulty in coming to any satisfactory opinion regarding the morbid changes on which the complicated symptoms of the disorder may depend. The signs manifested in the different external structures were, indeed, in most cases, equally characteristic, as they were obvious; but the vices of function to which these could be attributed, with justice, gave occasion to serious perplexities, and left the mind bewildered amidst a multitude of conjectures. Theories have been hazarded, but nothing either of pathological or practical importance seems to have resulted from any inquiries that have been hitherto instituted*.

* I do not know what share imperfect nutrition, as more immediately furnishing the wants of the body, may have had in the

The subject is of much interest, in several points of view; yet we must make the humiliating confession, that little or nothing has been done to rescue the disease from the obscurity which originally surrounded it. In our practice we had little to guide us beyond vague analogical speculations; so, if we have been prodigal of medicine, an excuse must be derived from the unsuccessful issue of our multitudinous endeavours to combat a disease, which we had found so little under the influence of art. In this state of ignorance of the causes and nature, we must have indulged in empiricism on a larger scale. We tried, indeed, all the remedies recommended by the experience of others; we also tried such as had been found useful in analogous disorders, but all to no purpose. One after another failed, bringing to us nothing, as a reward for our solicitude, save disappointment and mortification. Our senses could furnish no distinct information respecting the physical agency to which the disease owed its origin; we knew it only by conjecture: the proximate cause was probably just as imperfectly known; notwithstanding that the utmost zeal and eagerness were evinced to discover some remedy capable of controuling the malady, it has held on its way, selecting its victims, and leaving eventually to the unhappy sufferers no other

production of this disease. The nervous energy was certainly blunted, and this has an important influence over the process; nay, the elements of the blood may have been in an anormal state.

choice, than either death or change of climate. "Ultima et unica remedia."

I believe that the loathsome affliction, as already hinted at, is in a great measure peculiar to this climate. Although it has often elsewhere in jails appeared in this country, or on expeditions, where men, from badness of food, or inclemency of weather, &c. have temporarily undergone wants and hardships of a debilitating nature, I am not aware, that in any other district of country, or even in any other hemisphere, has it sprung up spontaneously, as it were, without those concurrent causes usually considered essential to its production. Here the presence of any adequate remote causes, such at least as have been instrumental in the production of the malady in most other instances, were not, it must be allowed, very easy of detection ; yet, though less apparent by not being equally concentrated, as in other eruptions of it, one or more were possibly in operation, of sufficient power, to effect, through time, a similar effect in the system.

That the troops, for months past, have been subjected to deprivations, in point of good wholesome food, will perhaps admit of little doubt. For since the failure of last year's crops, grain, which is generally cheap and abundant in this part of the world, has been scarce, and at high prices. The inducements to fraud were therefore considerable ; nor would there be wanting sufficient facilities for introducing quantities of very inferior quality, which might either be sold alone at

tempting prices, or imposed upon the sepoy, mixed up with the better descriptions, so as effectually to elude discovery. In scarce years, such frauds can be practised with comparative safety. An acknowledged diminution in supply naturally begets a tolerant feeling, on the score of quality; and what would be rejected without hesitation, in abundant seasons, is now received under the persuasion that the circumstances of the times, and necessity rather than roguery or design, have led to the deterioration. Taking it therefore for granted, that, as has been supposed by others, bad grain entered largely into the common food for months past, would not the habit of eating segregariously, and only once a day, produce more mischievous consequences now, than under more favourable circumstances, when food was easily procured at low prices? Natives eat, at their diurnal meal, rather immoderately; and it would not seem to me at all extravagant to suppose, that the functions of digestion and assimilation may have suffered embarrassment or perversion, by the quantities of innutritious aliment which would thus be introduced to the economy. In vegetable diet, gluten is perhaps one of the principal proximate principles; it readily enough undergoes injurious changes; the due proportion of nitrogen may not have existed. The other nutritive materials might likewise equally suffer alterations of moment. Besides this, *ghee*, the ne plus ultra of luxuries to a native, was excessively dear, and though attainable in small quantity, exceedingly

impure: nor were the common condiments, so largely used in their food, this year more easily procured; so that the stomach and other organs immediately subservient to digestion would want the necessary stimulus to perform their office; and hence might ensue a host of bodily infirmities, which a rigorous season could readily ripen into some specific disease, such as the one in question. But be that as it may, there is not a shadow of doubt, that the sepoys have stinted themselves of their wonted allowance of generous diet, since the necessaries of life became so greatly enhanced in value. The greater number have perhaps not expended more of their pay than they used to do in preceding years; and if this be true, as I am led to believe it is, the aliment so procured, must have been either bad and injurious, or insufficient and debilitating, which, in either case, would be prolific of future evil to the health. Indeed the squalid, unhealthy aspect of the men testifies palpably to the fact.

For a period including, I believe, about 14 years*, the forces at the station have not felt the ravages of any similar visitation. They did however so far back as the above numbers would carry us, and under circumstances as nearly as possible analagous to those which would appear

* As to the exact period I am in doubt, no one here can give any information whatever relative to the subject. Superintending Surgeon Venour mentioned, that it prevailed here extensively in a Cavalry corps to which he belonged, I believe some time not very remote from 1820.

to have caused our present calamity. In the surrounding villages, matters are rather different; there, sporadic cases are of annual occurrence, in the cold season, among the poor and ill fed. But it is only after a succession of dry seasons, that foreigners become obnoxious to its attacks, as we had during the past few months but too well illustrated. In natural years, this climate is not, even to them, productive of much sickness. Generally speaking, sepoys enjoy as much health here as any where. Yet we know not what effect events, so adverse, and so unusual, may have had the power to communicate to persons little accustomed to encounter severe or rigorous weather.

Last year, little or no rain fell at any period: the preceding yielded a larger fall; but even in that season, the proportion was greatly short of an average, so that we had a deficiency of moisture for both, though incalculably less for the last, amounting almost to nothing which would admit of being estimated. We had not either those storms or electric phenomena which contribute so essentially to the purity of the atmosphere. The cold too, set in early, and differed materially from that of the corresponding months of ordinary years: it was bitter and blighting, attended by high penetrating winds from the west, which conveyed sensations of exceeding aridity. The air too, was destitute of that frosty character which is so bracing to the frame, as well as delightful to the feelings. Heavy falls of rain are always expected in January and February.

Last year, not a drop visited us, neither had we dense humid fogs or heavy dews, as is common and proper, according to the course of natural seasons. It is notoriously true, that throughout the year, less rain, by far, falls at Nusserabad, than any where else almost in the district. This fact was more remarkably the case in these years, forming a frequent topic to wonder and converse about. Often has it been our lot to witness torrents pouring from the heavens all around, within a mile or two; whilst no refreshing shower reached us for weeks together, to gladden the parched-up soil of this inhospitable spot. There would almost seem something repulsive in the very boundary pillars, to divert the clouds to the right or left when ready to burst over head, and expend themselves on more favoured places. The site of the cantonment too, though on an extensive plain, more elevated than the adjoining country, has been perhaps injudiciously chosen, in so much as the nature of the soil, or quality and supply of water are interested. The former is light, sandy, and of most barren aspect. There is no cohesiveness in it, from its being almost entirely destitute of vegetable mould, which consequently leaves it subject to be carried away in clouds by the strong winds which blow almost constantly during the hot months, rendering the air thick, and loaded with this minute sand. Water is procured by sinking wells to a great depth through solid rock, which gives it a strong saline impregnation. It was scarce in the past months. The neighbouring

districts produce no jungle of any consequence ; nor do I know of any jheels or other sources being near, whence insalubrious exhalations could be supposed to arise.

Now, if we shortly mention the different phases observed by the Scurvy, perhaps stronger reasons may be elicited for connecting it closely with atmospheric influence. The disease commenced with the cold season, we have cursorily traced. Thus the first cases were seen in October and November, simultaneously in two corps, or nearly so. They increased in number and intensity, as the cold augmented, till February, when both the weather and disorder became perceptibly milder. In March and April, it had nearly or entirely vanished, remaining absent till the end of May. Now fresh cases began to come into hospital ; but in a form somewhat modified : that is to say, they were milder than in the previous cold wea ther : but for the month of June was reserved the task of investing the disease with all the bitter attributes of the period of its greatest prevalence*.

I have elsewhere said, that the complaint left us in March and April, the interval between the cessation of the cold, and commencement of the hot weather, which is generally of a tolerably mild temperature. When I joined the 3rd regiment in the end of April, I found several patients then in

* Upon the whole it would be more correct to say, that although the cases were numerous, we had fewer aggravated ones. The general character of the complaint was, in truth, milder in June than the preceding Nov., Dec. and Jan.

slow progress of recovery, from what appeared pretty aggravated attacks. They were on that account intended for sick leave; but, from the ground which was already gained, I felt encouraged to trust to a more invigorating diet, to increased exercise, or with most confidence to the salutary influence of an ameliorated temperature, for an eventual cure. The result was satisfactory; for, in the following month, I saw them all one by one discharged from hospital—rare though genuine examples of the practicability of obtaining recovery in cases of Scurvy without assistance from change of air, which, in most other instances, was found indispensable. Here, without the slightest doubt, the whole, or at least chief, credit is due to the advent of a new or milder season. For, in the collective experience of every one here, nothing short of removal hence has, I may say ever, been found to eradicate the disease thoroughly from the system; although some were, in a measure, cured, (that is, the mouth and swellings, afterwards to be mentioned, got better,) and yet such a state of debility persisted, notwithstanding every effort to restore the vigour of perfect health, that the attempt proved almost completely abortive in this part of the world, where the complaint had been contracted. Amidst all our difficulties, we had happily this one expedient, which unerringly accomplished its purpose, when resorted to sufficiently early, ere the strength or constitution *materially* suffered. At an early stage, change of climate invariably succeeded. The transition

from disease to health took place with miraculous rapidity, though for weeks before no perceptible (under every imaginable mode of management) amendment could be obtained. Some delayed to take advantage of the indulgence, until reduced nearly to the last stage of disease and debility ; yet even in a few of these, extraordinary recoveries have, from time to time, been heard of. To have expected effectual aid from human art would, in those cases, have been utterly preposterous ; but a resource was left us, which offered to our patients a far brighter hope than our means were capable of affording them. Of this, we took liberal advantage in the 32nd. Had we been less indulgent on this point, we should have had to deplore, in all probability, many more casualties than actually occurred. I made no scruple of granting leave to every man whose disease was unequivocally scorbutic, after submitting him, experimentally for a while, to hospital treatment. If, at the end of ten days, or a fortnight, no improvement was evinced, I felt convinced that delay would only protract the recovery, or endanger life, and I hesitated no longer ; nor did I consider it prudent to permit any time to elapse, in sending away men, in whom the disease early shewed evidences of an aggravated attack. These, I at once despatched, without any preliminary trial. By this mode of proceeding, we lost only one man, an old intractable Brahmin. It was the first case that came under my notice ; and perhaps, had the nature of it been sooner detected, or had his prejudices been

less opposed to the necessary treatment, he, too, might possibly have lived to rejoice in a more favourable issue. Many of the men, thus sent to their houses, have since returned full of flesh and health; but, strange to say, and the remark is important, several of them, after rejoining their regiment, were again seized, and have been sent a second time to seek re-establishment of health in their native country.

Climate has been always admitted to exercise important bias over the character of disease, as well as over the constitution itself of man; and we know, that atmospheric insalubrities, to which we can assign neither name nor local habitation, can at one time excite disease of peculiar and specific nature, whilst at other times, they may only give asperity to an evil already in operation. Why therefore may we not be at liberty to suppose (and the supposition is feasible enough), that the climate of this region, when in an extraordinary degree arid, and the air deficient of those electric qualities usually seen, would be capable of awakening Scurvy rather than any other infirmity in a body already predisposed to it through debility? Indeed, I am not sure that it would be necessary to presuppose debility. The air itself may probably acquire properties quite pernicious enough for the production of such anormal degenerations in the human machine: and if we have seen other conditions of the atmosphere at one time cause fever, at another cholera, we may with just as much reason allow its instrumentality in the pre-

sent instance. There are thousands, year after year, living on in poverty and wretchedness; yet when have we heard of its giving birth to Scorbutic disease, without a combination of other contingences which are of rare occurrence? But bring this contingency to act upon vital energies, feeble from insufficient nutriment, and the diseases more or less formidable, according to the kind or potency of the exciting agency, will soon declare itself. Besides, the manner in which this Scurvy first broke out among us, militates a trifle against the fairness of attaching the whole blame, thus exclusively, to the unfortunate grain dealers; at best perhaps pretty tolerable rogues. They may have been in part guilty, though certainly not to the extent implied in the accusations lavished upon their devoted heads. Until September, we had not a single case. Indeed, I believe, none till the following month; but in Nov., Jan., and Dec., there was a rapid increase. There were fewer by much in Feb., whilst we had none, or next to none, both in March and April, up to the end of May; and during these 2 or 3 months of its absence, (the disease,) I do not imagine that any change would have been made in the food, to account for the circumstance. What became of it then the whole of that period? We have no other answer at hand than this, that temperature and change of season effected the complete though temporary immunity, which only endured until the hot winds, this season of unwonted strength, became established at the end of May.

The majority of Medical Officers here have, I am aware, lost sight entirely of climate, in their version of the origin of this disorder. They assign it no rank nor place among the remote causes, which are supposed to be concentrated in the grain alone, by virtue, so to speak, of its bad qualities. If it merits this blame, the adulteration must have been on a considerable scale, and unequally practised at different periods. Were they to follow in the relation of cause and effect, the one should closely pursue pari passu, any vicissitudes which the other might undergo. Scurvy in its course, has undoubtedly suffered vicissitudes. But to assume corresponding inequalities, in the supply and quality of grain, would savour something of begging for evidence, inasmuch as we have the strongest reason to believe, that nothing of the sort occurred. The supposition is not only without proof, but destitute of feasibility. I humbly conceive that we have hurried to a conclusion on a complicated subject, without examining the grounds on which we formed them, with sufficient impartiality. We can, by very easy steps, arrive at any inference we like; if allowed to take whatever premises may be convenient or suitable to our purpose. But, in a question of this nature, where hypothesis or assumption should be examined with jealousy, we ought to scrutinise the evidence on which, in the first instance, we make such assumption, and then see whether we can thence follow the chain of events to their final consummation. In this instance, we have not been enough

attentive in this respect ; for it is surely taking too narrow a view of the matter to limit our blame to the food alone, when we can call in the aid of perhaps a much more powerful auxiliary in the production of so extensive a mischief. Of the presence of the one, we have proof almost amounting to demonstration, whilst I do not know that we are at liberty to presume upon the existence of the other to any grave or injurious extent. Frauds, however, in the grain, may have been perpetrated. I would not deny it, but I venture to think that more than enough of blame has been imputed to it. Nor can I reconcile it with a fair exposition of the question to reject summarily atmospheric agency, of the rigor and unnatural condition of which we have evidence, in favor of any thing at best but of doubtful existence. Still, notwithstanding that the fact is not at all established, I see no harm in admitting the possibility of its being in part implicated*.

However, it is necessary to confess, that in the preceding attempt to explain the probable origin of Scurvy at this place, there must be included one fact which may throw some doubt on the accuracy of our opinions. I mean, the fact of all the bazars having entirely escaped. This, I confess, constitutes a difficulty from which consider-

* An official inquiry has been made into the quality of grain brought into the bazar throughout the year, and the result tends rather to disprove than confirm the suspicion of its having been inferior to that of other years.

able perplexity arises. Why a multitude of persons, to all appearances more obnoxious to inroads of this sort,—having their being, as it were, in the very focus of all the exciting or predisposing causes, whatever these were,—should have been so remarkably favored, I have no conjecture even to offer. The circumstance is not easily accounted for: there are numbers of poor miserable creatures, not only badly fed, but destitute of the most ordinary comforts which sepoys of the most precarious habits certainly possess, why then should those and such as those, half famished wretches, have enjoyed this singular immunity, whilst men, who were even noted as lovers of good cheer among their fellow soldiers, suffered, many of them, very severe attacks? The sudder bazar is situated midway betwixt the lines of the 17th regiment, half a mile in rear of it; and the lines of the other three Infantry Regiments, about the same distance in front. Yet what could have protected this well peopled spot from the malignant influences which so unsparingly visited their very vicinity? A magic circle must have surely encompassed it. The case was exactly the same with the regimental bazars. I do not believe that a single case of Scurvy occurred in any of them. A few, and but a few, of the camp-followers shewed symptoms.

Hindoos were, upon the whole, oftener the subjects of attack than Mussulmans, though I have seen no reason to consider the disease more generally inveterate in the one than was observed in

the other: neither has it been more susceptible of cure in the latter, notwithstanding their few prejudices. Men of black color, negro black, with robust bodies, had, I think, the complaint usually in a very aggravated form. The symptoms in these run their course with more rapidity than they were seen to do in persons of weaker frame. Yet I do not know that it ever shewed any preference for particular constitutions, temperaments, or even shades of color. All ages were equally liable, the young as well as the older and middle-aged.

I have nothing whatever to offer in elucidation of the pathology of the disease. Only one old Brahmin died, as already alluded to, in the 32nd under my care; and the prejudices of caste appeared so strong a barrier to post mortem examination, that no argument availed against the objections of his friends in the corps.

Symptoms. The invasion and course of this malady were by no means remarkable for their uniformity. There was a variety in the incipient as well as in the consecutive symptoms. Sometimes one single symptom first manifested itself, and continued to increase steadily, for some time before any other supervened; (such as the ulcerations in the gums.) At other times, pains and swellings in the extremities, were earliest in the field, and would precede, perhaps by a fortnight, any degeneration in the gums*, which would

* The disease presented itself in a variety of ways, and was actuated so much by caprice and irregularity, that sometimes for many days we were unable to determine the exact disease before us.

attract notice only after considerable suffering and bodily emaciation; whilst many cases at the commencement, and long after, were extremely ambiguous, and accompanied, until late in the disease, by none of the marked evidences which unerringly distinguished the true nature of the illness. In such cases, the patients complained of excruciating pains in one or more of the extremities, perhaps with little or no swelling, and so closely simulating Rheumatism that, in some instances, the distinction could not well be established. Even when tumefaction took place, about the joints or in the periosteum, the difference was by no means distinct. On the contrary, the two often became so blended as to force upon one the conviction, that both existed at one and the same time in the same individual. I am pretty nigh certain, that many cases were really of a mixed character, at least during the incipient periods. Eventually however, the scorbutic diathesis would so prevail as to throw the other in the shade, itself acquiring the entire mastery. It was unfortunate when the diagnosis proved difficult, in as much as the treatment most appropriate for the one was by no means that most suitable to the other. Much indecision arose from this doubt in our application of remedies; many days would elapse ere we could pursue any very decided course; and it was only from the rapid extenuation and cachectic aspect of our patient, that we had possibly the adversary at length bare and unmasked in his proper character, without any uncertainty calcu-

lated, as hitherto, to hinder the adoption of some fixed plan. At this moment, I have a Mussulman patient in Hospital, whose case has most distinctly all along shewn this union. His scorbutic symptoms are prominently declared, but throughout his illness temporary enlargements have occasionally seized various joints, exactly as Rheumatism commonly does; they are sometimes in the knees, sometimes in the wrists, but always yield to leeches or strong rubefacients*. In other cases too I could determine the same conjunction. I may take this opportunity to state, that I have no where seen the slightest ground for connecting Scurvy and burning of the feet in natives with each other. They do not seem to bear any affinity whatever, none at any rate, that I have been ever able to trace.

The following was perhaps the more regular succession of symptoms. For the first few days the patients felt some soreness in the gums, which might be seen to push up, puffy and congested, between the incisor teeth. There was languor, and perhaps a paroxysm or two of fever, or at times regular evening accessions. Day after day, the blunt projecting edges of the gums grew more prominent, became soft, and soon assumed a spongy hæmorrhagic character; the fauces, mouth, and tongue got pallid, and the breath emitted a heavy feculent odour. Now the pulse increased in

* In the genuine scorbutic swellings leeches rather did harm, and rubefacients little or no good.

frequency steadily throughout the day; irritative fever set in. Tormenting pains were developed in the muscular portions (more rarely in the tendinous) of some one or more extremities, such as the leg, arm, or thigh; seldom in more than one member, unless when the cases were of considerable aggravation. These sites became tumefied, exceedingly tense, non-elastic, and having the skin over them of a colour preternaturally dark. They were more or less diffused, sometimes occupying the whole circumference of the limb, as the leg from the knee to the ankle, which would have a shining polished appearance. Sometimes, they would only embrace a portion of the extremity, such as the calf, and then the colour would be generally darker. Vibices occasionally came out in other places, without either pain or swelling. In this state, the patient's flesh and strength wasted rapidly. The teeth, inbedded in the flabby vegetating gums, felt loose, and were unfit for the purposes of mastication. Horrid fœtor now proceeded from the mouth. Despondency took active possession of the mind. There was no sleep from intense suffering, nor was there any appetite. At this period every symptom underwent a rapid advance. Extreme exhaustion would ensue, and the unfortunate subject sink eventually, and more immediately, under dropsical effusion, (a very common result,) alvine discharges, or other terminations of utter debility.

I have however often seen the tumefactions above spoken of appear as the earliest indication

of the approaching evil*: the gums becoming, as in the ambiguous cases, only secondarily affected; whilst, in not a few, the whole assemblage of symptoms were simultaneously evolved. The swellings, as stated, were more or less diffuse or extensive, always hard and unyielding, and giving exquisite pain, especially in the night, increasing from sun-set, and causing febrile vigilance, till towards morning. Over them, the cuticle sooner or later assumed various shades of dark, being at times perfectly black, but commonly of the tint of venous blood, or perhaps more nearly the color of effused blood, as seen through the skin on the first or second day after a severe contusion. In many instances, the periosteum on exposed bones, such as the shin, was the seat of those enlargements, circumscribed so as to resemble nodes, and exceedingly tender, but both exhibited in other respects a perfect similarity. Blotches frequently occupied the thigh and hips, that occasioned little or no inconvenience. These were of lighter color, and of a slightly reddish tinge, or flesh-colored. Neither the one nor the other ever lapsed into ulceration under my observation. Sometimes discharges of blood, to considerable amount, took place from the nose, never to my knowledge from any other cavities. From the gums very slight irritation brought blood, in some cases very copiously, at all times to some extent.

* With regard to the pains and swellings, these also exhibited the most puzzling diversities. It was by no means easy to pronounce upon their precise nature in the first instance.

When the disease had attained to its utmost intensity in any individual, the mouth became abominably disorganized, the gums more particularly: indeed, other textures were seldom implicated; but the range of the gums both below and above, in very bad cases, retained no trace of healthy structure, being so elevated, soft, and cauliflower-like, as even to impede the free action of the upper lip. Yet, with all this, I have seen no exfoliation from the alveoli, though the teeth, held by the slenderest possible tenure, might readily be extracted by the fingers. Separation of such cases from the other sick was necessary from the horrible stench emitted; but in proportion as the complaint put on a milder aspect, and that it became less prevalent, the mouth was much seldomer the seat of disease:—in many, not at all, the only symptoms being the pains and swelling in the extremities so often mentioned, as prominent symptoms throughout.

Febrile excitement, though common, did not appear to be necessarily present, either as a premonitory or concomitant symptom; but when debility fairly set in, the pulse uniformly remained at an accelerated rate, perceptibly increasing towards evening in proportion as the pains became more distressing. The depression of spirits and anxiety were very striking features in the disease. It was not so much the anxiety of mind to obtain relief, which one sees in other states of pain and suffering, as a desponding dread or apprehension of the utter hopelessness of their con-

dition, rendering it often, on this account, a work of considerable persuasion to prevail on many of them to take the benefit of sick leave. The energies of the mind were laid prostrate, and it frequently required much patient management on the part of the medical officers, to induce the sick to observe the necessary cleanliness, or practise a salutary portion of exercise. To overcome this apathy, we had recourse to hope and encouragement, frequently however to little purpose; but when they failed, we were then obliged to adopt a more decided tone.

The secretions in most cases were not materially altered. Seldom was there any constipation, neither were the bowels relaxed much, unless medicine happened to be administered with too free a hand; in which case, they might become troublesome. The urine was always high-colored and strongly odorous, but I do not know that it possessed any other remarkable qualities.

Of the treatment, little need be said. I do think that the few who did recover were more indebted to chance changes in the weather, with other contingent circumstances, than to any essential aid derived from our remedies. We gave them, modified in a variety of ways, and we followed them up with steadiness, while a hope remained to encourage perseverance: yet, with all the attention we could possibly bestow, our success only went so far as to arrest the disease for a time in its onward course. It would be endless, and indeed a very unsatisfactory task, to enumerate

all the medicines we essayed in our conflicts with this strange malady. I may however mention a few, more in token of their failure, than in commemoration of their success. At one time, nitrated vinegar was thought to be doing good, and to a certain extent perhaps it did: for under its use, many bad cases not only made a stand, but actually were for a while improved. Madar was much of the same description: within certain limits, it evinced some power; in one case in particular, which made considerable advances towards recovery, I used it in pretty large doses, and commonly prescribed a pill of camphor and opium at night. He went to his home, with some others, before the exact issue could be known; for, an opportunity of sending them having occurred, I did not consider myself justified in keeping him here, for the mere purpose of proving the power of any medicine given experimentally. I thought it of some service in a few other cases too; but in none by any means so decidedly useful. Different preparations of iron were tried with no advantage whatever. Mineral acids, in conjunction with bitters, were of some efficacy. Cinchona, Chyretta, did more real good than Quinine, and their virtues were very distinctly improved by mixing a few drachms of spirits. I generally preferred a form of preparation similar to that followed in making the Comp. Decoction of Gentian, which itself answered our object exceedingly well. Wine was essential in advanced cases to support the strength,

as was Beer, were it procurable at no greater expense ; but since it shewed no particular superiority over the other, I preferred returning to the least costly : neither of them, according to my experience, merited confidence as remedial agents. For some days, under the liberal use of Beer, the patients would seem to evince considerable improvement, and for the first day, I really believed we had got hold at last of something which could remove our perplexities. I hoped for some few cures at any rate. The hope was but short-lived. There was a limit also to the power of Beer, which appeared to be expended after the 6th, or towards the 10th day. No Wine or Beer was admissible in the earlier stages, on account of the excitement they were apt to produce : even at later periods, some caution was required ; and in order to diminish the stimulating tendency, I was in the habit of giving tolerable quantities of soft sugar, more particularly in the Beer. I often wished for a field of ripe sugar-cane, for the unrestricted use of my patients. I made trial of the saline alterative treatment, without deriving much, if any, good from it. In short, I might run over a host of others that were administered with still less success.

In two cases which I selected as favourable for the experiment, the patients being robust, symptoms rather acute, and only commenced, I made trial of blood-letting without any appreciable benefit. In one of them, a strong muscular man, the pain and tumefaction was in the right forearm. His pulse was febrile, full rather, but soft.

The gums had begun to shew a turgescent tenderness, and all the symptoms were but of three or four days' duration, so that the practice could be fairly tested. He was first bled to about 16 ounces, until some feeling of faintness was induced; and on the second occasion, next day, to about twelve: but not the slightest mitigation of suffering, in any respect, was obtained from either, whilst the strength felt the loss perceptibly. The blood exhibited no buffiness; it coagulated slowly. The coagulum was florid, much less dense and cohesive than in inflammatory affections, and occupied the entire calibre of the vessel: it separated but a trifling proportion of serum*. The blood would, I should imagine, be highly carbonized in the advanced stages.

The local pains constituted a very serious and very harassing symptom. They gave great torture; and although we resorted to almost every imaginable application, such as rubefacients of active qualities, sinapisms and blisters, various sorts of fomentations and hot pediluvia, we seldom succeeded in imparting more than temporary ease. When change of weather, however, aided our local measures, we often obtained relief, which was more durable, though never permanent, especially when the scene of contention was in muscular parts. In those cases, where the periosteum on the more exposed bones was the seat of mischief, much good was derived from leeching, which

* In Scurvy the blood is said to form no coagulum. In these cases, it might be so likewise at later periods of the disease.

in one or two examples, removed the nodosity; for they were much like nodes in appearance, but infinitely more tender. In the fleshy portions of a limb, the result from leeches was very much otherwise. Local depletion, in such cases, instead of being of service, did considerable harm, by impairing the general strength, without compensating for it in any one respect by any alleviation of the pain endured. There was indeed no use in pursuing the shadow while we disregarded the substance. Those pains, and the ulcerations in the mouth, were merely symptomatic of a depraved system; and as long as this remained unimproved, so long our attempt to remove the minor symptoms, and such as were dependent upon it, must have proved, as they indeed were in a great measure, abortive. All sorts of washes were used for the mouth; Alum water, Chloride of lime, Myrrh, &c. The fœtor was in part obviated, but the mouth was made nothing better by any of them. Such then is the sad result of our experience in the management of this malady. It is still in the ascendent, and mocks the impotency of our art.

I am not acquainted with the history of the Scurvy in Ceylon; but when it has appeared in other situations that I have heard of, supplies of fresh food and vegetables, with removal of or from physical cause, soon put a period to the calamity; whereas here, neither improved diet, fresh vegetables, which I procured for them from private gardens, or pure air, (that is to say, fresh air, such as it was,)

exercise, cleanliness, or all or every one of these regulated and combined, seemed capable of making any decided or salutary impression. In short, we could only say, save and except the few exceptions already alluded to, that the disease might be impeded in its onward movements for some time. Nor would those few exceptions fully authorize to report recoveries, simply because the proportion of cures bears so discouraging a comparison with the whole number affected from first to last.

3rd Aug.—NOTE. In the preceding hurried and very imperfect sketch of Scurvy, as it has appeared at this station, I have purposely avoided bringing the account, such as it is, farther down than the commencement of the rains, that I might, by the delay even of a few days, see more distinctly the exact extent of amelioration which the disease would undergo through so complete an atmospheric change. In the 3rd Regiment, there have been only two actual admissions of fresh cases for the last fortnight or more, the others are re-admissions. I am enabled also to say as much of the 17th Regiment, by information derived from Dr. Nicoll himself. The cases are in both corps infinitely milder, and the patients in Hospital rather improving than otherwise. Dr. N.'s patients are positively recovering, and I think that mine also have given, within the last few days, more decided tokens of amendment. Did the weather permit of sufficient exercise morning and evening, they might, even now, be

recovering. Exercise and ablution have all along been strictly enjoined, and certainly with essential benefit.

This is a revolution in the weather which was greatly needed; and I see every reason to hope for signal benefits, from so thorough a regeneration, to our scorbutic Sepoy. The disease will now, I dare say, gradually leave us.

Nusserabad, August, 1834.

AN

ACCOUNT OF THE SCURVY,

WHICH

APPEARED IN THE 4TH REGT. LT. CAVALRY AT NUSSERABAD.

BY T. ROSS, ESQ.

Presented Nov. 1st, 1834.

SCORBUTUS first appeared among the syces and grass-cutters of the 4th Light Cavalry, during the month of October, 1833. Only one trooper shewed symptoms of the disease in that month. In the following month, a greater number of cases were admitted into Hospital, among whom were 5 or 6 troopers. In December, a few more cases were admitted, after which the disease disappeared till May, of the present year, when it again became very common, and cases still continue to occur, in such numbers, indeed, as to induce the Brigadier commanding the station to order a Medical Committee to inspect the different Regiments, which has brought to light a great number of cases among the men still doing their duty, very few of whom however belong to the corps under my charge.

I think there is good reason to believe, that bad and unwholesome food has been the predisposing, and, possibly, some unknown state of the atmo-

sphere, the proximate cause of the disease. In consequence of the small quantity of rain that has fallen during the last two years, very little grain has been raised in this or the neighbouring districts; hence many old and forgotten grain pits have been opened, and much damaged grain introduced into the Bazars for sale, the use of which for food will, I apprehend, in a great measure account for the prevalence of Scurvy at this station; in proof of which I may mention, that the poorest and consequently worst livers were those who first shewed symptoms of the disease. The Hindoo troopers, who live solely on grain, were last year, with one exception, the only sufferers among the fighting men; and the Mussulmans, who eat butcher's meat, with the above exception, entirely escaped. I must admit however, they are *now* suffering in nearly equal proportions, though this I conceive may be satisfactorily accounted for, from the poverty of our Mussulman troopers, occasioned by the exorbitant price of provisions for the last 13 or 14 months, preventing them from indulging in their usual nourishing food. With respect to the state of the atmosphere, I may state, that, during 1833, only 6 inches of rain fell, instead of 12 or 13, the usual quantity; that the mean temperature for 1831 was 77.5, for 1832 76.5, and for the last year so high as 80.5, in addition to which I may add, that there was an evident deficiency of electric fluid in the atmosphere: but whether these facts have had any effect in producing Scorbutus, and how, I am unable to say.

Symptoms. The patients were in the first instance admitted with severe pains in the inferior extremities, particularly about the ancle-joints: gums more or less spongy, and in many instances, completely concealing the teeth from view: pulse considerably accelerated: loss of appetite. Occasionally considerable intermissions of pain occurred, but in almost every case a great increase of pain occurred during the night. Many patients had discoloured patches on the legs, and in the worst cases great swelling and hardness, generally about the Gastrocnemii muscles. In some, the sub-cutaneous glands of the legs were enlarged. As the disease advanced, Diarrhœa supervened, and was the immediate cause of death in most of the fatal cases.

Treatment. Were I to enumerate all the medicines employed for the cure of this disease, the list would be a long one: but when I state that scarcely in one instance did medicine seem of any avail, it would only be occupying time uselessly to specify them. I may mention, however, that vegetable and mineral acids were liberally employed. Bark and Quinine, in conjunction with liberal quantities of wine, were had recourse to; but I can only flatter myself that these last, combined with opium, may have rendered the last days of the sufferers more endurable than otherwise they would have been. I had an opportunity of giving Beer in two cases, in one with marked benefit, but in the other it proved quite useless: there is however great reason to anticipate

favorable results from the liberal use of Beer to patients labouring under this disease. Though medicine proved so utterly useless in the case of Scurvy, I am happy to say, that whenever we could send a patient away from the station, he was certain of recovery, and so quickly that, in many instances ere he got six marches off, a marked improvement was observable; and accordingly no casualties occurred among the troopers of the 4th Light Cavalry: but among the syces and grass-cutters, who have not the means of support when absent from the Regiment, the deaths were nearly as numerous as the cures.

Three troopers, who had recovered their health while on leave, rejoined the Regiment about six weeks ago; but having again shewed symptoms of the disease, it was deemed necessary to send them home a second time.

Annexed is a table shewing the number of cases admitted into Hospital up to the 1st instant, with the result. Before concluding I may mention, that a monkey kept at one of the troop stables died with unequivocal signs of Scorbutus.

	Admitted.	Discharged.	Died.	Transferred.	Remaining.
Troopers, ...	29	0	0	23	6
Syces and Grass-cutters, ...	15	2	9	0	4
Total,...	44	2	9	23	10

ACCOUNT OF THE FIN

OF

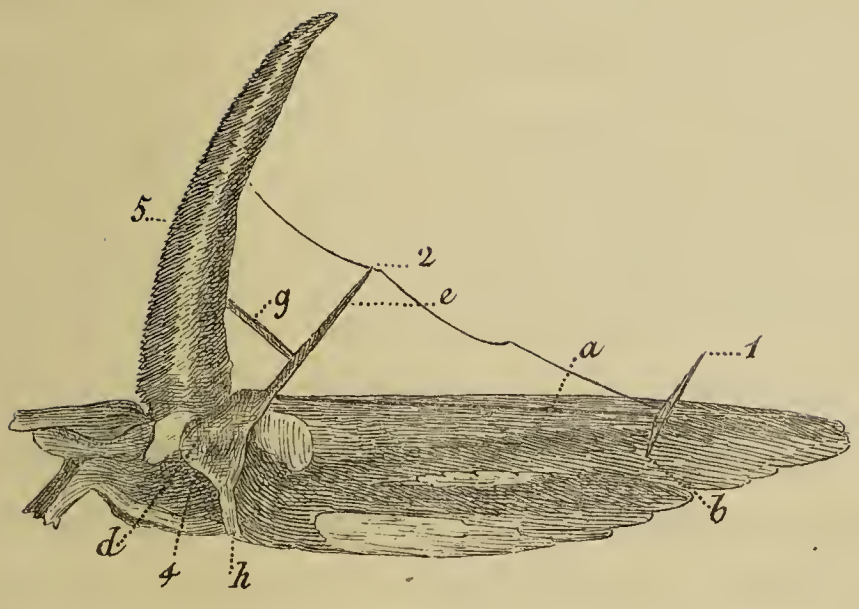
THE BALISTA.

By J. W. KNIGHT, Esq.

Presented April 4, 1835.

The Balistes, belonging to the family of the Sceerodermes, and order Plectognathi, of the subbrachial Malacopterygians, (Cuvier,) possesses in its first dorsal fin, an offensive and defensive weapon, the mechanism of which is curious and highly interesting: a question might be raised, of its being really destined to the purposes I have attributed to it, and more particularly since Cuvier and Lacepéde, who have given descriptions of this fish, have passed it over without notice; but I hope to prove by the position, simplicity, and firmness of its parts, that it is equally qualified to fulfil the offices of a fin, and those above mentioned, which I have assigned to it.

The fin consists of three spines, connected by an elastic membrane, extending only to half the length of the first, covering the second and third, and attached to the inner border of the groove on the ridge of the back, in which the rays are con-



5. The 1.st Spine.
2. The 2.d do.
1. The 3.d do.
b. The ginglymoid joint.
a. g. 2 connecting ligaments.
4 The fixed axis.
e. h. The ascend.g & descend.g process.
d The body of the 2.d Spine.

tained when at rest. The accompanying sketch will serve to represent a section of the cavity and accessory pieces of the machinery.

The first spine curved and studded in front, with sharp serræ, presents posteriorly a groove, which is narrowed as it descends ; from thence a ligament passes backwards to the 2nd spine—at the base are two small tubercles, looking inwards : it forms with capsular ligaments, and the inner margin of the trough, a ginglymoid articulation.

The 2nd spine may be divided into the body, sharpened before its lateral edges, being slightly furrowed, for the reception of the groove of the 1st spine, and smoothed inferiorly, where it plays over a fixed axis. An ascending process, and two descending processes, (one of which only is seen,) articulated with the centre of the circle, of which the axis is a segment.

The 3rd spine is connected to the 2nd by a ligament, and with a nodule of bone on the floor of the cavity forms another hinge joint.

When erection is required, four small muscles, inserted on the sides of the 1st and 2nd spines, raise the fin, which from the mechanism described is fixed so firmly as to resist the strongest attempts at withdrawing it; the latter object is effected by a small muscle on the posterior surface of the 3rd spine, which contracting acts through the ligaments on the whole chain of bones ; releasing the body of the 2nd from the groove and tubercles of the 1st, it returns the instrument to its proper sheath.

An engraving of the fish may be found in the 2nd volume of the Plates of the Dictionary of Natural History, by the Professors of the Jardin des Plantes; but singularly enough they have omitted the membrane and ligaments, without which the fin would be rendered imperfect.

SKETCHES

OF

TWO UNDESCRIBED VENOMOUS SERPENTS,

WITH FANGS BEHIND THE MAXILLAR TEETH ("A CROCHETS POSTE'RIEURS.")

BY TH. E. CANTOR, Esq. M. D.

Presented May 7, 1836.

Cerberus Grantii*.

Superne cinereo-fuscus, stria utrinque post-orbitali et vitis nigris interruptus; subtus albicans, fascia dentata nigra maculatus; squamis omnibus alte carinatis; cauda continua, fere $\frac{1}{4}$; scutis 143, scutellis 59.

The head triangular, broader than the neck, compressed, covered above with little hexagonal, keeled scales; between and before the eyes 13 small irregular laminæ. The muzzle obtuse, with a small opening for the bifurcate greyish tongue. The nostrils very small, opening horizontally in the middle of a single lamina. The largest laminæ are those covering the temples and the

* Another species of Cuvier's genus Cerberus is dissected, and represented by Prof. Duvernoy, viz. Russell's No. xvii. "Karoo Bokadam, Col. Cerberus Daudin, Col. decipiens Oppel (vide Ann. des Sc. Nat. T. xxx. Pl. 4, Fig. E.)

upper lips (nine on each side). The under lips also covered with nine laminæ, smaller than those of the upper lips. Eyes small, prominent, lateral; iris greyish brown; pupil black, viperine, i. e. when exposed to the light contracted like a perpendicular rima. The mouth small; the upper jaw longer than the lower, with two rows of little reflex, sharp teeth; the last in the maxillar row much longer than the rest, furrowed on their convex margin, covered up in a fold of the gingiva. In the lower jaw a row of sharp reflex teeth.

The trunk cylindrical, tapering towards the tail, covered with little sharp-keeled rhomboidal, imbricate scales.

The ventral shields narrow, and the scutella of the tail very small. Anus simple, covered by a semi-circular shield.

The colour of the back greyish brown, divided by a number of black irregular bands; each side of the temples and the upper part of the neck is marked with a narrow black line; the chin, the abdomen and the tail, white or grey, with a black band, running in zig-zag.

The one here described is young; they are found upwards of three or four feet.

Length of the head,	0	9 lines.
Ditto ditto trunk,	11 inches,	8 ditto.
Ditto ditto tail,	4 ditto,	3 ditto.
Total length,	16 inches,	8 lines.

Circumference of the neck, 1 inch, 2 lines.
Ditto ditto body,.....2 ditto, 4 ditto.

The river, tanks and pools form the abode of these serpents ; now and then they are found in damp places at no great distance from the water, which provides them with fish. Several young specimens imprisoned in empty bottles, would never feed spontaneously, until latterly an accident induced me to put them into water, which change seems to agree better with them, as they greedily devour fish, in catching which they shew great skill.

Potamophis*, *novum genus.*

Caput parvum, ovatum, collo vix latius, rostro brevi, rotundo. Buccæ parum tumidæ. Oculi mediocres, antici, valde prominentes. Nares superæ in laminæ singulæ confinio. Inter laminas nasales et frontales lamina singula rhomboidalis ; lamina verticis, forma tiaræ episcopalis. Gula squamosa. Dentes maxillares multi, retrorsum magnitudine crescentes ; postici duo longissimi, in margine convexo sulcati ; numerus dentium palatinorum ; anteriores quorum maximi. Truncus teres, versus medium crescens, squamis lævibus, per lineas longitudinales dispositis, tectus. Abdomen rotundatum, angustum. Cauda brevis.

Potamophis Lushingtonii.

Supra olivaceus, lineis nigris inter squamas variegatus, abdomine albicante, linea media nigra

* Ποταμὸς—ὄφις.

diviso, vitta albida utrinque incluso, cauda gracili fere quadrante ; scutis 167, scutellis 71.

The head ovate, a little broader than the neck ; the muzzle rounded ; laminæ nasales nearly semicircular, in the middle perforated by the small nostrils ; between the nasales and the frontales a single rhomboidal lamina ; lamina verticis formed like an episcopal tiara ; laminæ orbitales of the same size as the former ; occipitales the greatest, nearly pentagonal. The temples are covered with a number of laminæ, three of which touch the external margin of the occipitales ; the upper lips covered with eight laminæ on each side, of which the fourth underneath the orbita, before and behind which two smaller. The under lips are covered by seven laminæ on each side, smaller than those of the upper. The throat covered with a great number of smaller scales, comparatively more numerous than those of the Pythons et Cerberi. The colour of the head dark olive brown, lips and throat whitish. Eyes small, prominent ; black round pupil, golden iris. The mouth moderate ; in the upper jaw maxillar and palatal teeth. The former numerous, small, sharp, reflex, increasing in size, so that the two hinder are by far the largest, covered in a folding of the palatal teguments, and furnished on their convex margin with a furrow, communicating with the opening of the excretorian duct of the venomous gland. The palatal row longer, decreasing in size from the snout to the fauces. The teeth of the lower jaw are throughout of nearly the same size. The

tongue greyish, bifurcate. The trunk is cylindric, increasing in the middle, tapering towards the tail, covered with hexagonal, smooth scales, (those of the back imbricate,) disposed in twenty-one *l*ongitudinal ranges, so as to leave the interstitial black skin open, which forms as many lines in zig-zag, and gives the scales the appearance of being edged with black. The scales are olive brown, increasing in size as they approach the abdomen of the three lowest ranges: the first is light-green, the other two chamois-coloured, edged with deep lilac, so that these three ranges appear like a light ribbon, enclosing on both sides the abdomen. In young ones these three ranges are of a whitish colour. The scales of the tail are smaller, but of the same shape and colour, as those of the back. The abdominal scuta are narrow from side to side, arched, of a whitish colour, their side margins dark edged and marked in the middle with a black spot. The anus is covered with a large, sometimes bifurcate shield, surrounded on both sides by a number of little granular scales.

Length of the head, ... 1″ 1‴
Ditto ditto trunk, ... 17″ 7‴
Ditto ditto tail, ... 5″ 2″

Total length, 23 inches, 10 lines.

Greatest circumference of the body, 2″ 1‴
Ditto of the neck, ... 1″ 2‴

This ophidian inhabits the river, feeding upon little fish. According to the natives, it is never found on dry ground; nevertheless I have kept one in an empty jar for more than seven months,

during which time it declined to touch the offered food, without any visible effects from this protracted starvation. The jar being afterwards filled with water, it exercised its appetite upon living fish, which it attacked and swallowed under the surface of the water, and was also seen to keep the bottom during long intervals without raising the head above the surface. When in the empty bottle, it cast its skin regularly every month, which process occurred more seldom, when the same was filled. The muscular strength of this serpent, whose size is said never to exceed about three feet, is remarkable.

Different as their shapes may be, there is a strong resemblance in the habits and the anatomy of the Potamophis and the Cerberus. A peculiarity in the former, observed in the three specimens I have dissected, affords the distribution of the hepatic and cystic duct, entering united the duodenum, behind the separate opening of the pancreatic duct. Prof. Allessandrini has found the same by dissection of the Accipenser Sturio, (Ann. des Sc. Nat. Tome xxix. p. 194,) the only instance I know of, where this has been constantly observed.

As regards the effects of the poison of the serpents described above, I shall merely state here that the result of several experiments have shewn the consequences to be far less dangerous, than those attached to the bite of venomous serpents which are armed with fangs in front.

OBSERVATIONS

ON SOME

DISEASES OF EUROPEAN SEAMEN IN BENGAL.

By D. STEWART, Esq., M. D.

Presented October 3rd, 1836.

Having, during the past ten months, had occasion to direct my attention particularly to the peculiarities of tropical disease exhibited among European Seamen immediately upon their first arrival in Bengal, I beg to lay the following observations before the Society without any pretension to novelty, but because their importance has so forcibly arrested my own notice, that I feel anxious they should derive confirmation or correction from the candour or indulgence of my brethren.

The number of cases which came under treatment in the Howrah Seamen's Hospital from 1st November 1834 to 1st September 1835, was 244, of which all but three were *white men*,—I mean European or American. They were all sent into hospital from on board of ships recently arriving in harbour, and thus their previous history was generally ascertained with tolerable accuracy.

The number of deaths was 14, and every *body* was submitted to a minute and careful examination.

Though abundantly instructive and interesting to me, it would be to no purpose to occupy the time of the Society with the details of cases, sufficiently familiar and of every-day occurrence. It may be right, however, to mention, that the great majority were cases of acute disease, and that many of them had undergone treatment before admission into hospital.

The remarks which I have to offer refer chiefly to the peculiarities, in type or character, of Fever and Dysentery which affect the European seamen on first arrival in Bengal.

One circumstance will, I think, be very generally perceived,—and that is a remarkable difference which exists in the susceptibility of disease, and the *capacity* for depletion between the officers and the common seamen. This is, in all probability, owing to the different diet and mode of life which they have followed during the voyage of some months; the former faring comparatively sumptuously every day, the latter living on salt provisions, with a spare allowance of vegetable, and scantily supplied with fresh water. The consequence is, that the former, when taken ill, whatever the nature of the seizure may be, whether fever, simply of a congestive character, or symptomatic of some local inflammation, will generally bear a full blood-letting at the commencement of the attack, and repeated general

or local bleedings afterwards, better than the common seamen. Not only this, but depletion, which in many cases may be of questionable propriety in the latter, is often peremptorily indicated in the former; its omission is fraught with hazard—the rapidity with which inflammatory action once established proceeds to its termination, if unchecked, in such young and robust subjects, is great and urgent;—to pause, or to delay while there remains the slightest tenderness or pressure over the abdomen, the slightest confusion about the sensorium, the smallest difficulty or hurry of respiration, the least redness and dryness of tongue is perilous; while the prompt and judicious use of the lancet, the scarificator, and leeches, with brisk purgatives, strict antiphlogistic regimen and fresh air are almost all that is ever requisite in most cases.

The common seaman is a far more difficult subject. I never commence the treatment, however distinct the nature of the complaint, without ascertaining, as far as possible, the circumstances which have attended the attack, the previous health, diet, clothing, &c. during the voyage, and whether he has been on shore, exposing himself to the sun and committing other indiscretions since arrival.

In most cases the diet of the seamen (and I have observed it more in American than other ships) seems greatly to impoverish their blood. When taken from a vein, it is either of a dirty brick colour or almost black; it often remains quite fluid in

the vessel which receives it, or when it congeals it does not exhibit the form of coagulum, or the bright buffy coat of vigorous inflammation. If venesection is performed in the erect posture, the patient often faints very soon ; and if the operation is repeated, the inflammation which it was meant to subdue is indeed arrested for the time, but the powers of life have received a shock which it is often very necessary to be prepared for, and to obviate by the use of some sedative, such as camphor, hyosciamus, or ammonia.

An opiate is to be given with the usual calomel pill the first night ; and this, too, before any purgative can be administered to relieve the almost certainly loaded state of the alimentary canal. This most important step is not safely taken until the following morning, by which time 'nature's sweet restorer' has given the necessary strength to bear it.

Venesection in the cases I speak of, can seldom be performed with benefit after the third day of fever ; nor with safety upon that day if this operation has been already once performed, perhaps timidly, and its repetition delayed or neglected until this time. A very few ounces of blood now taken from the arm may appear for the moment to relieve the laboring vessels, but the collapse which ensues, particularly if the operation be late in the day, or on the decline of a paroxysm, is highly dangerous, and not unfrequently fatal. It sometimes happens in these cases, that very soon after the venesection, purgative medicines or antimo-

nials which may have been taken during the day, and produced little or no effect, now suddenly begin to operate violently. The patient faints every time he attempts to get up to stool; and unless strictly forbidden to do so, and carefully supported by spiced sago or some other light nourishment, may be found a corpse in the morning.

But whether venesection has been practised at first or not, I consider that, on or after the third day of fever, the lancet, that most potent weapon entrusted to our hands, should be used with the utmost caution. A reference is always necessary to the previous treatment, the effect which it has produced, the constitution and temperament of the patient, and the period of the paroxysm. If depletion is necessary, leeches are now much safer, and are probably as effectual in relieving general or local congestions: they are easily and cheaply procurable in Bengal, more manageable than in most parts of the world, and ought always to be preferred.

As to blisters, although a very favorite remedy on board ship, I think that I have observed them to do a great deal of mischief from being employed too early, and before active congestion has been relieved, or inflammation subdued by due depletion, and the primâ viæ thoroughly cleared, and at rest. I conceive blistering in fever to be chiefly useful in promoting the action of the capillaries, stimulating the absorbents to carry off that serous effusion which probably always takes place in

some degree during every paroxysm of fever into the loose cellular substance round the great cæliac centre, and which as rapidly disappears, under the stimuli of small doses of calomel, antimony, and cathartic extracts, aided by blisters during the remission.

Is not the crackling feel, the crepitus which may be perceived during the decline of a long paroxysm when the hand is laid flat upon the abdomen, and the bowels are rolled about under its pressure, attributable to this cause? I have repeatedly observed it to disappear entirely in the course of a few hours under the stimulus of a large mustard sinapism, and minute doses of calomel and colocynth.

It is worthy of remark, that both blisters and calomel fail, or more truly are decidedly injurious if used much, before the previously existing action which they are intended to replace has been fairly subdued. I have not unfrequently seen cases of acute dysentery, which had been treated at their commencement by one delicate bleeding according to prescribed rule, which had been followed by the equally supposed imperative scruple dose of calomel every morning, and the opiate enema every night: perhaps a table-spoonful of castor oil has been given once, but not repeated lest it should increase the already violent purging; then a huge blister has been applied to the belly; mercurial frictions have then been resorted to in the hope of hastening the eagerly expected salivation, but in vain; no improvement takes

place, the purging, tenesmus, and bloody stools continue, the skin remains hot and dry, the gums are pale and swollen, the tongue has bright red edges and a dry brown crust in the centre, "notwithstanding all the purging,"—the blistered surface of the abdomen sloughs, and the patient is sent an incurable to hospital. If a gentle purgative is given it brings away large sloughs, fœtid coagula, pus, and putrid matters of all sorts, but too often the case is indeed hopeless : hiccup, diarrhœa, clammy sweats, and hectic, soon end the scene.

I have not observed the same *periodicity* to characterise the fevers of seamen, which belongs in a greater or less degree, I think, to all those which affect older residents in Bengal. It is true that in the generality of their fevers, a certain time of the day, generally 8 or 9 P. M. marks the period of access or paroxysm, and that the early morning is the usual period of remission ; but this is the same in most diseases, and in all climates. My remark, then, more strictly is, that seamen newly arriving in Bengal are exempt from any fever which may be called *essential*, and suffer always from those which are symptomatic of, or accompanied by, some distinct local inflammation. There were, indeed, several well marked cases of intermittent fever in Hospital, but all of them had been subject to the complaint before ;—and one man during a voyage of six months had his regular return of ague for several successive days at the full moon.

The seat of congestion, the locality of the inflammatory process, will, of course, be liable to constant variation, and will depend chiefly upon the constitution and susceptibility of the individual and the nature of the immediate exciting cause: exposure to the sun, drunkenness, and other excesses on shore, great and long continued fatigue, wet clothes, and cold.

The worst cases of fever are those where several of these causes concur, as was the case with some of the ships which left port in the wet, sultry, and stormy months of July and August last, and returned dismasted or leaky. In the cases admitted from these vessels, the head was the organ which always bore the *onus* of the disease. Upon admission they were generally insensible or nearly so: the countenance was pale and haggard, the eyes suffused and yellow, the patient was either brought with difficulty to listen to questions, or replied incoherently. Yet the skin was cool and moist, the tongue perhaps not much loaded, the pulse not quick or hard, no pain was complained of any where, nor any ailment acknowledged, save "weakness" and "headache."

Whosoever has seen the lancet used *once* in such a case, will not readily be induced to do so himself. The head is to be instantly shaved, a scruple of calomel is to be given by itself, and after a tepid bath, if readily procurable, the patient is to be left undisturbed. Six or eight hours of rest and quietness are to be allowed before any

further measures are adopted: the patient will then bear 12 or 18 leeches to the temples, and a purge of pulv. jalap. comp., after which 1 gr. of calomel, $\frac{1}{8}$th gr. of Ant. Tart. and 5 or 6 gr. of cathartic extract may be given every three hours, until it is time to purge again; and then, and not *until then*, can a fair opinion be formed of the present condition of the bowels, liver, &c.

Continued or copious catharsis at first is to be avoided, for the same reasons as after the bleedings formerly alluded to. The powers of life would be rapidly extinguished. I have seen cerebral effusion take place from this cause, which, I am persuaded, might probably not have occurred otherwise. The second day is the critical one: either a marked reaction, though slight, takes place, and if so, the case may be considered comparatively a safe one while leeches, calomel, colocynth are at hand; or the collapse continues. A low delirium comes on: there is an uncertain, or very rapid small pulse,—the tongue and lips are dry and brown and crusty,—the head is very hot, the extremities cold and clammy. Such cases are the nearest to typhus of any in India. The evacuations are quite uncertain, for secretion of every sort is arrested or disturbed—the nervous excitability is deranged or destroyed, and medical interference, though imperatively necessary, must be as cautious and prudent, as decisive.

The question to be decided is, whether the cerebral disturbance is the effect of continued arterial action, of passive venous congestion, or of

serous effusion on the surface of the brain; and although, had the case been under treatment from the commencement, or long enough to have observed its progress, the diagnosis would be comparatively easy, it is a matter of as great difficulty as importance to decide, when all we know of the case before us is, that the patient has been exposed to the combined influences of most powerful external causes, and has probably all the time been drinking largely of ardent spirits.

We have reason to conclude, that a certain degree of inflammatory action exists within the brain, probably affecting the membranes at the base, and within the ventricles, when we observe that the eyes are keen, and wander wildly—are brightly turgid, and with pupils contracted. Answers are hurried and prompt, though incoherent —the patient is fretful and restless—does not remain a moment in one posture—the thirst is urgent. When these symptoms are present, we proceed with leeches, the cold dash, saline purgatives, with antimony.

If, however, the stage of inflammatory action has proceeded to that of serous effusion, or subsided into venous congestion, the eyes are less vivid and red, more heavy and suffused: a sluggishness and unwillingness to direct the attention to any object prevail: questions are not understood, or not replied to: the patient mutters to himself. It is now that blisters, large and general, are necessary: calomel and colocynth in small and quickly repeated doses: mercurial frictions to

promote absorption, and quinine to support the strength. A few hours will decide the propriety or otherwise of the plan adopted;—and he must be a bold—or rather I should say a dangerous and unfeeling—man, who can leave his patient in such a state to the care of attendants, or lay down a rule which shall be applicable to all cases.

The most favorable symptom, and the first, is sleep. At first a short and refreshing slumber, which should not be interrupted: but the first pause should be availed of to administer the prescribed dose, which may often be done without scarcely awakening the patient. I am quite certain that I have seen more than one case go on to perfect recovery, where effusion had actually taken place on the surface of the brain: and whoever has experienced the gratification of witnessing the successful result of a line of treatment, decided upon by one's own unaided judgment, will consider himself amply repaid for the fatigue and trouble he may experience in following it up.

It is very seldom that opiates are of any use. The only sedatives admissible are camphor and hyosciam. which may occasionally help to equalise the excitability; but opium tends so much to mask the few dim signals which are left to guide our practice, that I have always avoided it.

The last remark I have to make regards the mighty difference which exists in the constitution of different classes of seamen.

There is a set of men, chiefly Swedes and Danes, of huge stature and bulk, large bone, flaxen hair, light eyes, and pale skin, and altogether of most buccolic appearance, who yet are very bad subjects for tropical disease. Their muscle is soft and flabby, the cellular structure predominates over the fibrous, and the nervous system over the sanguineous. In fever the period of active congestion is short and violent—the determination is generally greatest to the head; but there is also disorganising congestion of the glandular system, and acute inflammation of the mucous follicles. The paroxysm ends in profuse sweating. In dysentery there is an early proclivity to hemorrhages, and the ulcers of the colon are found on post mortem autopsy to be large and flat and irregular, covered with velvety sloughs, and blood —not small and round, and deep, with high edges like those in firmer habits, where the coats of the intestines become thickened, not attenuated.

In inflammation of the liver the tendency is to deep abscess, and in that of the spleen to disorganising soft enlargement, and dropsical effusion. The nervous system is always greatly disturbed from the commencement, whatever the ailment be. There is a great alarm and anxiety, and an invincible apprehension of a fatal termination, tending, in fact, very greatly to produce this result.

They do not bear venesection well; often fainting at the touch of a lancet, or when a very few ounces have been taken.

Mercury in any form exhibited takes powerful, but uncertain, and not very manageable effect. Antimonials produce great debility. Both these agents are, therefore, improper in the fevers and dysenteries affecting such constitutions: and the remedies in our hands, to be used always with caution, are the lancet and leeches, ipecacuanha, jalap, saline purgatives, camphor, and quinine.

Howrah, 19*th September*, 1836.

CASE

OF

EXTENSIVE LIVER ABSCESS

SUCCESSFULLY OPENED.

By ARCHIBALD COLQUHOUN,

Assistant Surgeon, 12th N. I.

Presented May 7, 1836.

Bryant McGrath, Gunner 4th Com. 5th Batt. Artillery, had been in hospital under the care of different medical officers from the 30th of January, till the 23rd of May, 1835, at which time I was placed in medical charge of the detachment of Artillery at Benares. He was then in a state of great debility, with pulse very small and quick; pain in the right side, increased on pressure, or on taking a full respiration. Tongue and skin natural, bowels generally confined. From the treatment he had already undergone, and his weak state, I did not think it safe to pursue general bleeding or very active remedies. Leeches were frequently applied to the side, after which a caustic blister. Purgatives were daily given, and ii. gr. of calomel every night in hopes of inducing ptyalism. As might be expected, however, from the presence of the abscess, this treatment, although continued for 15 days, produced no sensible effect on the constitution. About the 6th of May, the

fulness and prominence of the side first became distinct, after which it increased daily, under the application of large poultices and dry cupping glasses. On the 15th of the month I performed the operation in the presence of Mr. Sawers, now Member of the Medical Board, and Mr. Jackson, Surgeon of the 8th Cavalry.

Operation.

15th May.—An incision about two inches long, immediately under the edge of the ribs, was made into the prominent part of the swelling, down to the peritoneum, on cutting through which with an abscess lancet, a copious discharge of purulent matter of a reddish yellow colour, took place: in the course of half an hour seven pints were discharged. The incision was dressed with simple ointment; he expressed immediate relief from the pain, and could then lie down comfortably, having been obliged to sleep in a sitting posture for some time before. At 9 P. M. I was suddenly called to see him, and found him cold, pulseless and nearly dead. Owing to hemorrhage from some of the vessels of the abdominal parietes, upwards of two pounds of coagulated blood was lying under him. Pressure with a pledgt. of Ol. Terebinth. on lint immediately stopped the bleeding.

16*th*. No bleeding from the incision since last night: has slept well; pulse quick and weak, skin cold, and covered with a clammy sweat. On opening out the wound and taking off the pledget, I introduced a probe, but no pus exuded from it.

Apply simple dressing and bandage to the abdomen. R. mist. quinin. sulph. twice a day.

Vesp. Has been pretty easy all day: skin now warm, pulse quick and small: has passed three copious fluid yellow stools during the day; no discharge from the wound. R. tinct. opii, tinct. hyosciami, and vin. antimonii, āā gtts. xxx. mist. camph. ʒ i.—H. S.

17*th*. Says he slept well all night: very little discharge from the wound. Cont. mist. quinin. with acid. sulph. Drink a bottle of beer a day.

17*th*. Vesp. Pulse quick and skin hot all day: one copious yellow-coloured stool; little discharge from the wound. Applicat. cataplasma immolliens to the wound.

18*th*. Did not sleep well last night: complains of slight pain in the wound: passed one healthy bilious stool: skin warm, pulse slower and softer. Repetat. med.

Vespere. Complains of great weakness: a thin watery discharge from the wound. Pulse quick and weak. Repetat. Haust. Anodyn. ā

19*th*. Slept pretty well last night, and passed one healthy motion: slight watery discharge from the wound. Pulse 110: skin moist, tongue clean. Continuentur med.

Vesp. About 6 ounces of thin bloody sanies discharged from the wound to-day: wound looks unhealthy: pulse small and quick. Continue poultices. Repetat Haust.—H. S.

20*th*. About a pint of thin reddish-coloured pus discharged during the night: bowels opened:

sweated a good deal during the night, and complains of great debility: skin cool, pulse quick and weak. Repeat medicines.

Vesp. Has passed three yellow liquid stools to-day: about 8 ounces of pus discharged from the wound to-day: pulse very quick and weak, skin cool. Repeat draught.

21*st*. Passed a good night: little discharge from the wound: pulse quick and weak, skin warm. Continue medicines and poultices to the side.

Vesp. Has been very easy all day: about a pint of thin pus discharged from the wound. Repeat medicines.

22*nd*. Passed a good night: little discharge from the wound: one stool. Pulse quick and weak.

23*rd*. Slept well last night: passed two stools: discharge continues slight.

From this time he continued to improve slowly till about the beginning of June, when a troublesome diarrhœa came on. On the 8th of July I was removed from charge of the Artillery, but under the judicious treatment of Mr. Christie and afterwards of Mr. Powell, he perfectly recovered, and returned to his duty in August. I saw him in the cold season marching through this station with his company in perfect health, and as stout as ever.

Allahabad, 19*th April*, 1836.

NOTES

ON

CASSIA LANCEOLATA,

OR

THE PLANT WHICH YIELDS THE TRUE SENNA LEAVES OF THE CALCUTTA BAZARS.

By N. WALLICH, Esq., M. D.

Presented September 6th, 1834.

Cassia lanceolata, Forskäl, Flor. Ægypt. Arab. p. 85.—Lamarck, Encycl. Bot. vol. 1. p. 646, t. 332, f. 3.—Colladon, Hist. Nat. et Med. des Casses, p. 93, t. 15, f. C.— De Candolle, Prodr. Syst. Nat. Regn. Veg. vol. 2. p. 492.—Linnei Syst. Veg. cur. Sprengel, vol. 2. p. 339.—Nees von Esenbeck and Ebermaier, Handb. der Med. Pharmac. Bot. vol. 3. p. 205.—Wallich, Cat. Herb. Ind. Or. n. 5318*, c. (in folio 204).

Cassiæ species angustifoliæ et ligustrinæ prox. Herb. Madrasp. Wall. loc. cit. a.—*Cassia ligustrinoides,* Herb. Wightian. Ibid. b.

Cassia acutifolia, De Lile in Descr. de L'Egypte, Hist. Nat. tom. 2. Botanique, p. 219, t. 27, f. 1.

Senna officinalis, Gærtner de fruct. et semin. vol. 2. p. 312, t. 146.

* By mistake I wrote Forst. instead of Forsk. in this lithographic catalogue.

Cassia Senna, Roxburgh, Hort. Beng. p. 31.—Ainslie, Mat. Med. of Hindoost. p. 43, (2nd edition, vol. 1. p. 390; vol. ii. p. 249).

Senna leaves, Fleming, Cat. of Ind. Med. Plants and Drugs, in Asiatic Researches, vol. ii. p. 109.

The above synonymy might easily have been enlarged to a much greater extent, if my object had been to attempt a detailed history of Senna, and of the two species of Cassia which are now known to produce that leaf. But I wish to limit these notes solely to an account of the plant which yields the drug commonly sold in the bazars throughout Hindustan, and more particularly those in Calcutta; and with this view I have confined myself to a quotation of such only, among the numerous authorities which presented themselves, as treat of the plant and drug in a more or less botanical respect, or with particular reference to this country; and even of these I have only noticed such as appeared to me of use to my brethren in the profession in India, and which I was able to consult personally. I have likewise thought it unnecessary to swell this little memoir by extracting from the works of Fleming, Ainslie, and others, what relates to the Indian names of the drug, its uses among the natives and the like; because I could have offered nothing more than a stale repetition of the information given by those authors.

It appears from Dr. Roxburgh's Hortus Bengalensis, that the plant was first introduced into the Botanic Garden of Calcutta in the year

1800, by the Rev. Dr. Carey. I am unable to say what result attended its culture at the time, but it may be concluded, from the circumstances of the plant not existing in the garden in 1808, and disappearing afterwards altogether for many years, that considerable difficulties were experienced in preserving it. In Roxburgh's valuable MS. Synopsis Floræ Indicæ, the plant is introduced under the same name which it bears in the Hortus Bengalensis,—namely, *Cassia Senna*; and a specific character is added, which establishes beyond a doubt its identity with our *Cassia lanceolata*. He says, however, that the plant is "a native of the interior of India as well as Arabia, &c." of the correctness of which assertion I must express a serious doubt. In quoting Willdenow's edition of the species plantarum of Linnæus for his plant, a question naturally arises: which of the two, if not more, species of Cassia which are confounded there under the name of *C. Senna*, was actually meant by Dr. Roxburgh? Taking the species as he found it in Willdenow, the extensive geographical distribution to which I have alluded is, strictly speaking, true; but, as I before observed, the species which Roxburgh had before him was undoubtedly *C. lanceolata*, the true and genuine Senna plant of Asia Minor, which plant most unquestionably does not grow wild in the interior of India, nor in any part of the East Indies.

There is another species of Cassia which produces Senna leaves, and is called by Colladon *C.*

obovata. It is distinct from ours, although for a long time it was confounded with it by Linnæus and others. This, too, is a native of Asia Minor; but does it not also grow in India? Both Colladon and other botanists cite Burman's *C. Senna*, which is decidedly an Indian production, as a synonyme; but I suspect they are wrong in so doing; in other words, I am inclined to consider Colladon's and Burman's plants as two different species, belonging to different countries. Roxburgh has a plant which he calls *Senna obtusa*, Flor. Ind. vol. 2. p. 344, and for which he quotes Burman's *C. Senna*; and this plant, judging from Roxburgh's excellent description as well as from its place of growth, (Seringapatam,) and lastly from native specimens which I have myself had an opportunity of examining, I believe to be a distinct species from the Egyptian *C. obovata*, and which I suggest may be called *C. Burmanni*. I must observe here, that *Cassia Senna* has not been introduced into Roxburgh's printed Flora Indica, although it is inserted both in his Hortus Bengalensis and the MS. Synopsis quoted above; but his *Senna obtusa* is mentioned in all three works, (under the genus *Cassia* in the two last).

There are, then, two species of Cassia which undoubtedly produce the Senna of commerce, both being exclusively natives of Egypt and Arabia; and a third distinct species, which belongs to the continent of India, is said by Roxburgh to yield a substitute for that article. The following is a synoptical view of them all.

1. *Cassia lanceolata*, Forskäl, produces the best sort of leaves, and is the subject of my present observations.

2. *Cassia obovata*, Collad. loc. cit. p. 92, t. 15, f. 1, (with exclusion of the citation from Burman, which belongs to the following species).

3. *Cassia Burmanni*. Wall.—*C. Senna*, Burm. Fl. Ind. p. 96, t. 33, f. 2.—*Cassia vel Senna obtusa*, Roxb. locis cit.—*C. obovata*. Wight, Herb. (non Collad.) in Wall. Cat. Herb. Or. 5319 a.—*C. Senna*, Herbb. Madr. et Heyn. Ibid. b. et c.—*C. Senna* Hb. Russ. Ibid. d. The plant which I gathered on the banks of the Irawaddy at Paghamew (Ibid. e.) is probably this species, though I cannot speak with positive certainty, as neither my Burmese Herbarium nor my manuscript notes respecting it are with me in this country. This species has not been found in Hindustan proper. It would be very desirable to try still further the efficacy of its leaves; and I beg to recommend the subject to the consideration of those who may have the means of making the experiment.

About eight years ago I succeeded in raising a number of plants from seeds found in pods among a batch of Senna which had recently arrived from Arabia. They proved to be Forskäl's *C. lanceolata*. Some difficulties were experienced at the commencement in preserving the plants and making them produce good seeds; but they were gradually surmounted, and we have at this time (August, 1834), several plots of

land in cultivation with the species; the greatest proportion of the plants being in a healthy and vigorous condition, full of flowers, and showing successive crops of ripe pods. The unusual degree of heat during the late dry season sensibly affected some of the individuals, by causing a disease in the root which killed them during the rains; still our crop is far better than I had any ground for anticipating: a good quantity of seeds has already been obtained, and a further supply remains still to be reaped, which will enable us to raise a much larger proportion of plants next year. The mode of cultivation which has been found to answer best is to transplant the seedlings after they have acquired a height of about 6 inches, at a distance from each other of 3 feet, in slightly raised beds or patches of open ground, previously well cleansed from weeds and enriched by the addition of some vegetable mould. We sow the seeds in the month of November; germination commences in about twelvedays, and the transplanting takes place in February; after which the plants grow luxuriantly, provided they are watered during the hottest days of April and May. Upon the whole, it has been found, that shading of any kind does more harm than good; and although a number of the young plants perish in their tender age from the excessive heat, yet by constantly supplying their place with fresh seedlings no sensible loss has occurred in the end from that source. The plants begin to blossom in April, and they con-

tinue producing successive crops of flowers and fruit until the cold weather begins to make its first appearance early in October, soon after which the plants die away; very few individuals surviving a second year.

Mr. Twining having with his accustomed liberality undertaken to ascertain the quality of the Senna leaf produced this year at the Botanic Garden, I am enabled to annex his very satisfactory report to this paper It is proper, however, to observe, that the leaves furnished to that gentleman were gathered during the rainy season, in the months of July and August,—probably the most unfavorable of all for securing their active principle pure and undiluted, not only because the sap of the plant is then at its fullest rise, and necessarily modified by the continued production of flowers and fruits, but also because the drying of the leaf without the aid of artificial heat (as has been the case in the present instance), is a matter of doubtful effect. I am, therefore, warranted in saying, that had the leaves been collected in the dry weather, as I will take care they shall be next year, they would probably have proved superior to the Senna procurable in the Calcutta bazar.

Some explanation may perhaps be necessary for my offering a detailed description and coloured figure of a plant, which is already known to the world, in both respects, chiefly by the labours of De Lile in the superb French work on Egypt. But independent of the account

there given being necessarily short and succinct, although illustrated by a most beautiful engraving, the work itself is so very expensive and scarce in this country (I believe it does not exist any where except in the Library of the Asiatic Society of Calcutta, at least on this side of India) that few only can have access to it. I have had the advantage of examining the plant leisurely in its various stages ; and as my object is to furnish the Medical profession in India with the means of identifying a plant yielding one of the most extensively useful articles of Materia Medica, I trust I shall be excused even if I had nothing to offer but what had been furnished already from other sources.

The plant is 3 to 4, rarely 5 feet high ; erect, branchy, of an elegant rounded form and aspect, and of an uniform pallid glaucous colours, corresponding well with the elegant clusters of large pale-yellow blossoms, which are produced in abundance during several months in succession ; the whole forming an object of great beauty, not surpassed by any of the smaller species of the extensive and difficult genus to which it belongs. Root long, woody, tapering, perpendicular, sending forth few branches only ; annual, rarely biennial. Stem cylindric, as far as an inch thick at the base, together with the thicker branches covered with a rust-coloured slightly scabrous epidermis, which on close inspection is found marked with minute parallel fissures. Branches round, pale-green, unequally and obtusely angular, very

slightly flexuose towards their end, which, as well as the leaves, are glaucous and perfectly opaque; while young there are a few short sub-adpressed hairs on both sides of the leaflets as well as on the branches, which disappear by age. Tender shoots covered with much grey pubescence. Leaves petioled, pinnate, spreading, 1 or 2 inches distant from each other, scattered, from 6 to 10 inches long. Common petiol cylindric, slender, about 2 inches long, with a narrow furrow on the upper side; its base swelled and gibbous below. About the middle on the upper side, across the furrow, is seen a slightly elevated line covered with short, minute, brown evanescent hairs; this is also the case between the opposite leaflets on the slender, straight rachis, which ends under the terminal pair of pinnæ with a short, small and deciduous cuspis. Pinnæ exactly opposite, in 6 to 10 pairs, spreading, $1\frac{1}{4}$ to 2 inches long, slightly increasing in length from the base of the compound leaf to its apex, narrow or linear-lanceolate, tapering-acute, the midrib ending in a very minute point, margins gently decurved, base a little unequal, the upper half being acute, the lower a little broader and blunt; of a thickish, almost fleshy brittle texture, flat, very pallid and glaucous; both sides, especially the lower, have a number of minute adpressed short hairs, which disappear by age; the upper side is marked with some oblique capillary nerves, the lower by a very slender whitish rib. Partial petiols very short, measuring scarcely a line in length, cylin-

dric. Stipules small, fleshy, opposite, spreading and recurved, withering, lanceolate, acute channelled, smooth, with an oblique semicordate base, the outer side of which is thicker than the rest, rounded, concave below; within the base are a number of black, short, subulate loosely attached and deciduous hairs or ciliæ. Racemes solitary in all the upper axils, peduncled, erect, somewhat incurved, as long as the leaves, bearing about 20 large bright yellow or gold-coloured, inodorous, short pedicelled flowers. Common peduncle one-third longer, and considerably thicker than the petiol, cylindric; rachis somewhat flattened and waved; pedicels one-flowered, very short, with a joint at the middle, and thence thickening and clavate. Bracte exceedingly thin, membranous, pellucid, obovate, obtuse, concave, embracing the oblong and obtuse flower bud with its pedicel, adnate at the broadish base, falling off before expansion takes place. Calycine segments oblong, obtuse, concave, about $\frac{1}{3}$ of an inch long, very thin and delicate, recurved, caducous. Corolla of an uniform pale-yellow gold colour, spreading, twice as long as the calyx; petals unequal, caducous; the uppermost oblong-cuneate, sessile; the others obovate, and supported on very short claws; $\frac{3}{4}$ of an inch long, many times broader than the setals; they are all obtuse, somewhat triplinerved, finely reticulated on the outer surface, with slightly elevated nerves and veins. Anthers very unequal, of two kinds; three sterile ones very short and small, placed under the

narrow upper petal, subsagittate, retuse; seven are fertile, linear, with sagittate bases and oblique biporous apex; of these, five are straight, much longer than the former; the one under the pistil has a longer filament than the others; two are curved and very long, reaching above the middle of the lateral petals. Pistil curved, longer than the stamens; ovary linear, covered with grey adpressed pubescence, margins swelled, the sides marked by eight little protuberances caused by the ovules; base supported by a short, fleshy, pubescent pedicel; style bent downwards, cylindric, except at the base, which is slightly compressed; stigma minute, acute. Pod oblong, flat, almost foliaceous, pendulous, before maturity glaucous, and with a number of short adpressed hairs, afterwards almost smooth, of a dark brown colour, shining on the bloom being rubbed off; $1\frac{3}{4}$ inch long by $\frac{3}{4}$ in breadth; oblong, slightly curved or scymetar-shaped; one of the finely elevated margins being longitudinally convex, the other concave; very obtuse and obliquely cuspidulate at the end; base rounded, and supported by a short pedicel; sides a little elevated along the middle, and marked across by slight swellings and depressions caused by the seeds; a number of parallel approximate capillary veins, originating from the marginal nerve, run obliquely across the sides towards the middle, forming reticulated anastomoses there as well as along their course by means of lateral veins. Valves flat, pale-ferruginous and a little pitted within. Dissepiments

extremely thin and narrow, vanishing towards the margins. Seeds mostly eight, of a greenish-grey colour, shining, solitary in each cell between the dissepiments, flattened, triangular, obcordate, about four lines long; their base contracted into a short thick obtuse beak, from which a ridge ascends on each side towards the middle; the sides as well as the thick margins are scabrous from numerous unequal small protuberances. Funicle long, transversal, a little adscending, capillary, originating from the concave margin of the pod, and inserted into one side of the beak of the seed, disappearing on the latter coming to maturity. The interior structure, indeed the whole pod, corresponds entirely with the accurate description and figure given in Gærtner's work, quoted at the beginning of this paper.

Note.

I beg to refer the reader to Mr. Royle's valuable *Illustrations of the Botany of the Himalayan Mountains*, p. 186 to 188, and again p. 201, Tab. 37, for very important and interesting information respecting the plant and drug which form the subject of the above paper. It arrived in India long after I had presented my notes to the Medical Society, otherwise I should have given these substantial value by copious extracts from my highly esteemed friend's masterly work. His very accurate figure of the of the plant supersedes entirely the necessity of any being added to this paper.

N. W.

H. C. Bot. Garden, 7th Nov. 1836.

APPENDIX.

No. I.

Abstract of a Case of Extra Uterine Pregnancy, by J. S. Login, Esq. M. D.

The subject of this case was a woman, who was found dead in the lines of a Native Regiment, under circumstances that seemed to call for a Medico-legal examination of the body. As far as could be ascertained, the poor woman had been exposed to considerable mental distress and anxiety for some time before death, and in addition to this, she had been subject to occasional attacks of severe abdominal pain, generally referred to the right hypogastric and inguinal regions. During the last three or four days, these paroxysms of pain had been accompanied by attacks of syncope; on the subsidence of which, she was able to resume her usual occupations. On the day on which she died, these symptoms were said to have recurred with unusual violence. Externally there were no marks of violence, and with the exception of slight serous effusions within the cranium, and some old pleuritic adhesions, no morbid appearances were observed either in the head or in the thoracic cavity. On laying open the abdomen, the seat of the disease was at once apparent. A large coagulum of blood covered the whole of the anterior surface of the intestines. On removing this, the source of the hemorrhage was discovered in what appeared at first to be the uterus, but which, on closer examination, proved to be a collapsed sac, having no communication with the cavity of that viscus, but with the right Fallopian tube, the uterine extremity of which was obstructed. The tunics of the sac adhered anteriorly to the abdominal parietes, over a small extent, while on the posterior aspect, a fissure of about two inches in length, exposed to view the ruptured membranes which had contained a fœtus of about ten weeks old, subsequently found among the coagula in the cavity of the pelvis. The uterus was enlarged to the usual dimensions, in the second month of pregnancy, having its cavity lined with a membrana decidua.

No. II.

Abstract of a Fatal Case of Abscess of Liver, by J. Gordon, Esq.

This case occurred in a Gunner of Artillery, 30 years of age. The man was admitted into hospital on the 2nd of February, complaining of severe pain of right side, increased on pressure, coughing or turning in bed. He had no fever; the pulse was moderate, and tongue clean. He had been discharged on the 25th of the previous month, cured of an attack of acute Hepatitis. He was ordered mercurial purgatives internally, and leeches and fomentations to the side; on the 25th, the pain was not better, and he was bled to sixteen ounces. This diminished the pain; but a degree of fulness, redness, and tenderness of the side became manifest. Mercurial alteratives, with an occasional dose of house medicine, were continued. On the 3rd of March, the pain was still severe on moving, the redness had extended, and fluctuation was perceptible: there was no fever or thirst. A caustic issue was inserted. On the 5th, the slough had separated, and there was a copious discharge of red serum, mixed with pieces of thick pus. On the 10th, the sore had an unhealthy appearance, the inflammation was extending around it, the discharge was more copious, thin, and reddish, and contained pieces of coagulated blood, and a little pus; a charcoal poultice and nitric acid lotion were applied locally. On the 16th, the sloughing continued to spread, two of the leech-bites had ulcerated, and the discharge was much as before, but attended with great fœtor. On the 24th, sloughing continued, the discharge was as before, and the patient began to be wasted by hectic fever. These symptoms continued to increase, and the patient died on the 4th of April. On dissection, the body appeared a good deal emaciated; the opening opposite the 7th and 8th ribs, at their cartilages, was about two inches in diameter, with the liver appearing at the bottom of it. The gangrene was about four inches and a half in diameter, extending upwards on the ribs. The cellular substance underneath was infiltrated with pus, and a pouch or bag, which would have contained the hand, was formed by the adhesion of the liver to the diaphragm. The upper surface of the right lobe was ulcerated superficially, for a space of about two inches, and there was an infiltration of pus into a small portion of its edge. The liver was otherwise healthy, perhaps rather pale and hard. The pericardium was distended with serum, and the whole of it whitish, thickened, and exhibiting traces of coagulable lymph on its surface.

The above would appear to have a considerable affinity to those cases recorded by Mr. Hawkins, in Vol. 18th, Part 1st, of the Transactions of the Medico-Chirurgical Society of London.

No. III.

Letter from Surgeon James Hutchinson, Secretary, Medical Board, to W. Panton, Esq. Superintending Surgeon, Neemuch, dated 25th April, 1834.

In a Postscript to the Annual Report of the Neemuch circle, for the past year, by your predecessor, Mr. Venour, cases of Scurvy are said to be not uncommon among the natives, both at Nusseerabad and Neemuch.

The subject is one in which the Medical Board take a great interest, as it appears to them, that a full and perfect account of the disease, as it occurs under the circumstances mentioned, is still wanting.

The Board accordingly desire me to invite your attention to the subject, and at the same time to state, that any information which you or the Medical Staff within your division can afford them, will be most acceptable.

The Board beg to suggest, that in conducting your inquiries, you should carefully ascertain if the disease is in any way connected with the peculiar affection which has been denominated " the burning in the feet of natives."

In reply to this letter, several communications upon the subject were forwarded to the Medical Board ; amongst the number the papers of Messrs. Macnab and Ross, which are inserted in the body of the Transactions, vide pages 101 to 133.

No. IV.

Abstract of Cases of Rupture of the Spleen, by Messrs. Leckie, Greig, and Hutchinson.

Mr. Leckie's case of Rupture of the Spleen occurred in a Corporal of Artillery, 34 years of age. The man had been discharged on the 6th of January, cured of an obstinate intermittent : he was re-admitted on the 21st of the same month, after hard drinking, complaining of acute pain diffused over the whole of the abdomen, with which he had been seized during the night. The belly was tender on pressure, full, and round ; countenance anxious ; breathing quick and short. Pulse 130, small, and weak, T. white and dry. S. cool. B. open. He was bled to

12 ounces, fomentations were applied, and the bowels attended to, which they continued to be, throughout the case. At 1 P. M. he was reported to be in the hot stage of fever, which commenced with rigors at 11. Eighteen leeches were applied; and tenderness of the abdomen continuing, they were repeated the following day. On the 23rd, he experienced slight pain on pressure along the course of the colon, for which eight leeches were applied. Shortly after the morning visit, he was seized with severe rigors, followed by a hot and a sweating stage. The pain was completely relieved by the leeches, and the gums had become slightly sore. On the 24th, 25th, and 26th, he is reported to be free from pain and complaint. About midnight of the last, however, he was seized with excruciating pain in the left side, which soon became diffused over the whole abdomen, and he could not bear the slightest pressure over the region first indicated. The head, thorax, and extremities became cold; the pulse scarcely perceptible, and in three-quarters of an hour the man died. On dissection, 46 fluid ounces of blood were found in the cavity of the peritoneum, a large coagulated mass occupied the left hypochondrium, and communicated with a rupture in the under surface of the spleen, where the vessels enter. When this clot was removed, the spleen was found not to be enlarged. The peritoneum over the small intestines was slightly opaque. Mr. Leckie has since heard it reported, that this man received a severe fall on his left side the day before his admission into hospital.

The subject of Mr. Greig's case was a Sepoy, 45 years of age. He was admitted into hospital at 9 o'clock p. m. of the 7th of October, with intermittent fever, which went off in the course of the night, leaving only slight head-ache. On the morning of the 8th, leeches were applied to the head, and a purgative administered, which gave him great relief. In the evening, he said, he felt quite well, and had a little calomel and antimonial powder at bed-time. Next morning, he declared there was nothing the matter with him, walked to the lines, ate some dinner, and returned to the hospital before 10 o'clock a. m. At 11, he was seized with the cold fit of an intermittent fever, during which he died. On opening the abdomen, a considerable quantity of dark-colored blood was discovered, which was found to have proceeded from numerous openings in the substance of the spleen. This viscus was completely disorganized, very much enlarged, and so softened throughout as scarcely to bear the gentlest handling without breaking; its color was that of chocolate. Mr. Greig states, that this man's previous health was good, and that at no period did he complain of pain or uneasiness in the left hypochondrium.

The subject of Mr. Hutchinson's dissection was a native about 25 years of age, who appeared to have enjoyed excellent health previous to the accident, which proved fatal. The body was brought for examination, within half an hour after the man's death, and was then still warm. The inspection was postponed in consequence for some hours. On opening the abdomen, it was found filled with fluid blood, which was traced to have proceeded from a rent in the under surface of the spleen. This had been occasioned by a blow the man had received on the left hypochondrium with a small piece of brick-bat, which had been thrown at him; but with so little force, that it had left neither discoloration nor abrasion of the surface.

His death, as far as could be learned, almost immediately followed the blow. The spleen could scarcely be said to be enlarged.

No. V.

Case of Tetanus, by T. Roe, Esq. Surgeon, H. M. 38th Foot.

Mr. Roe's case of Tetanus occurred in a Private of H. M.'s 38th Regiment; of fair complexion and sanguine temperament, aged about 25. He was admitted into Hospital on the 25th of December, in consequence of a lacerated wound of the thumb and fingers of the left hand, occasioned by the bursting of a fowling piece, which he had bought of a native. The wound became gangrenous and sloughing, and he is reported, on the 1st of January, as having been troubled all night with spasms of his fingers and hand. These formidable symptoms continued to increase in spite of the treatment employed, and he died at noon on the 3rd, after having suffered every torture which tetanic patients do. On examination, five hours after death, the right foot and toes were found so much turned inwards, from the ancle, by the spasmodic action of the muscles, that it appeared dislocated. On being placed in its natural position, it immediately resumed its unnatural distortion, and retained it; although five hours after death.

The calvarium was strongly adherent to the dura mater, which was very vascular. The medallary portion of the cerebrum and cerebellum was soft and doughy; the membranes on the base of the brain were florid, red, and very vascular. On laying open the whole length of the spine, the sheath was highly vascular, particularly at three points, the 3rd cervical, the 2nd dorsal and the 4th lumbar vertebræ. On laying open the sheath, and turning it back, the inside was pale and shining. The chord beautifully covered with florid red ves-

sels along its whole course downwards, as if painted by art. The vessels anastomosed more thickly at some points than at others, viz., near the last cervical and the middle of the dorsal vertebræ. The nervous substance appeared firm, and resisted the scalpel. There were some spots of vascularity over the stomach, which seemed continued from the lower portion of the œsophagus. This tube was particularly contracted for two inches from the pharynx downwards, so that it scarcely measured the diameter of a large goose-quill. As it united to the stomach, it spread out a little wider, and exhibited a slight inflammatory blush. The upper portion was rather pale and shining.

The spleen was very large, brittle, and of a dark purple colour.

No. VI.

Abstract of a Report on the Climate and Diseases of Van Dieman's Land, by W. Milligan, Esq. M. D. Assist. Surgeon, H. M. 63rd Regt.

The new colony of Western Australia, according to Mr. Milligan, is situated on the Western Coast of New Holland, and extends from Cape Londonderry, in Latitude 13° 44′ South, to West Cape Horne, in Latitude 33° 8′, and from Longitude 112° 52′ to 129° from the meridian of Greenwich. The Swan River district, the one first settled, and still the most important, is situated in between Latitude 32° and 33°; the entire area being about 50 miles long by 30 in breadth. The country is generally of the open forest description, the surface undulating, and covered with a great profusion of trees, shrubs, and herbaceous plants. Three rivers intersect this valley, the Swan, the Canning, and the Murray. They are subject to the influence of the tides, abound with fish, and, though generally shallow, are subject to occasional inundations, which leave extensive alluvial deposits. The Swan is navigable for boats of four or five tons as high up as Perth, which is about 12 miles from Sea Coast. Fresh water lagoons are numerous; there are also others containing salt-water. The water of the wells, though at first indifferent, from not having been procured from a sufficient depth, is excellent. It sparkles in the glass, cooks food, and washes linen well and speedily, and may be drank freely without relaxing the stomach. . The strongest winds are from the north-west and south-west. The north wind is the hottest, and is very sultry during summer, destroying vegetation if long continued. During the summer, there is a regular land and sea breeze, the former prevailing

in the morning from the east, and the latter setting in about noon from south-west. The mornings and evenings are pleasant, and the nights cool. The sky is clear, and of a beautiful azure without cloud or rain: moderate dews descend at night. As the autumn approaches, the weather becomes less serene. The sky is occasionally overcast, with thunder-storms, which prove acceptable however, and beneficial, mitigating the excessive heat, and rendering the fields fit for the labours of the husbandman. In winter, the winds are occasionally boisterous, endangering the shipping if exposed; it rains for the most part two or three days together, and then clears up for a somewhat longer period. In wet weather, fogs are not uncommon in the mornings and evenings in the low grounds, or along the banks of the rivers. Hail of a large size occasionally falls; snow is unknown, and ice is but rarely met with. Fires are not unwelcome in the mornings and evenings; but on the whole are to be looked on more as a luxury than a necessary. Such is the nature of the climate and locality to which Sir James Stirling proceeded in June 1829, accompanied by a detachment of His Majesty's 63rd Regiment, to establish a new colony. Settlers soon commenced to arrive, and poured in rapidly, till the end of 1830, at which time, the population amounted to about two thousand. The vessels which brought them out, resembled in some measure Noah's ark, being crowded to excess with animals, birds, and plants, as well as men, women, and children, with provisions and household goods. If we can fancy the population of one of the parishes in England, mixed with a sprinkling of half pay officers, some gentlemen from the East and West Indies, and a few Cocknies, put down on the shores of a wilderness, we shall have some idea of the founders of this interesting colony. Their first object on landing was to get under shelter. Their domiciles were of course at first of a wretched description. Some had single tents; others huts of green-wood, pervious to every shower; while many had no other covering night or day than the wide canopy of heaven. Afterwards, when the settlers got on their own grants of land, their houses improved, by successive gradations, from the wooden house they had imported, or had made in the colony, to that of wattle and dub, and finally to the more durable structure of brick or stone. As might be expected, losses from the straying of cattle in the bush, and disagreeable adventures from the travellers losing their way, were far from uncommon; accidents from explosions of gun-powder, and from the use of fire-arms by persons unaccustomed to handle them, were likewise far from unfrequent; in no instance however did any tetanic affection follow. Notwithstanding these little mishaps, matters continued to go on pleasantly enough till

the beginning of the winter of 1830, when the supplies brought from England, consisting principally of salt meat, biscuit, and rum, began to fail; the harvest was indifferent; and to crown their misfortunes, after heavy rain, the rivers rose from fifteen to twenty feet above their usual level, and all who had commenced buildings on the lower grounds were obliged to desert them. From these various causes much personal fatigue and exposure were encountered, the hopes of the settlers damped, and their energies depressed; scurvy, fever, and dysentery consequently showed themselves. These diseases were principally confined to the lower orders; among the higher classes, who were better provided with the necessaries and comforts of life, and who were more temperate in their habits, there was little sickness and less mortality. With successive seasons, the harvest became more bountiful, the flocks more numerous, and scurvy has disappeared in consequence. The fevers have likewise become less prevalent, as the country has been more widely cleared and better drained. The Endemic diseases of the country appear to be principally inflammatory affections of the mucous membranes, Ophthalmia, Dysentery and Catarrh. Rheumatism is occasionally met with, in damp weather, in autumn and winter, of rather an obstinate description; and also a low fever, the *Gastro-Enterite*. Mr. Milligan's observations on these diseases have principally reference to the locality of Perth, the capital of the colony. This town is situated on the banks of the Swan river, on a gentle elevation, 30 feet above the level of the river, and about 40 above that of the sea. It is bounded to the South by the Swan, which is here three quarters of a mile broad; to the North by a string of fresh water Lagoons, which run up to the mountains; to the East by an extensive plain, terminated by the Darling range; and to the West by Mount Eliza, which running North and South, affords considerable protection from the strong gales coming in that direction. The Swan and the Canning unite immediately below the town in a large estuary, called Melville water, which still farther reduces the temperature of the sea-breeze in its progress inland. The soil is light and sandy, with the exception of the banks of the river, which are alluvial. The substratum is sandstone.

Having premised this much, I proceed to extract a few notes on the several diseases above specified. The Ophthalmia appears to be a sub-acute species of the purulent, and is, in Mr. Milligan's opinion, peculiar to the country. It made its appearance about the middle of March, and soon became epidemic, very few escaping an attack of it; in May it reached its acme, then began to decline, and disappeared in the beginning of June. Some itching was felt on its approach, the eyelids became sticky and adhesive, and fuller

than natural. In 24 or 36 hours, a viscid mucous discharge took place, the vessels of the conjunctiva became distended with red blood, and this state was often accompanied by redness round the eye externally; when the purulent discharge was considerable, the swelling of the eyelids often prevented the patient from opening them for several days, and exposure to light caused pain; but when the light was excluded, pain was seldom much complained of. In a few cases the sensation of sand being in the eye was felt, and was attended by a greatly increased secretion of tears. These symptoms generally subsided in four, six, or nine days, under the use of purgatives, diaphoretics, lead and zinc lotions; occasionally the unguentum calaminare was used to prevent glueing of the eyelids, and in more obstinate cases the ungt. nitrat. argenti. Bleeding was rarely necessary; but was had recourse to where there was much fever or pain. Blisters were applied to the nape with advantage. Before the appearance of the disease the heat was high, 120° in the sun at noon, and 90° in the shade; there was no rain, the light dazzling, and probably particles of sand floating in the air. All cases under Mr. Milligan's care terminated favourably; but some under less skilful or active practitioners were not so fortunate.

Cases of dysentery appear to occur throughout the year, but it prevailed in April, 1830. This, it will be recollected, was not long subsequent to the first establishment of the colony. The disease appears to have been of a mild nature. The symptoms were frequent, scanty dejections of mucus and blood, accompanied by tormina and tenesmus. The pulse was not often much excited, nor the temperature of the body increased. The tongue was white and furred, there was no thirst, and the appetite was but little impaired. It terminated favorably in a few days, in every instance except one, who was in a hopeless state, passing involuntary stools when admitted. The disease was induced generally by sudden changes of temperature deranging the balance of the circulation. The objects in attempting the cure were to correct this, to restore the suppressed secretions, and to remove congestion or inflammation. To fulfil these indications bleeding, the warm bath, aperients, diaphoretics, calomel and opium were had recourse to with advantage. It was necessary to be careful of the lancet, as many of the patients were tainted with scurvy; leeches were the safer remedy—mercury for the same reason could only be used with great care.

Scurvy first manifested itself in June, 1830. It was characterised by a bloated sallow complexion, sponginess of the gums and palate, sometimes giving rise to hœmorrhages; from these parts great debility, hard tumors on the thighs and calves of the legs, contraction of the

knee joints, petechio, vibices, and ulcers: pulse frequent and weak, skin cool, respiration anxious, tongue white, appetite good, bowels constipated. The mind clear and full of hope to the last. Many cases were admitted into Hospital in the last stage, with large fungous excrescences sprouting from the gums and roof of the mouth, contracted joints, diarrhœa, dropsical effusions, and extreme exhaustion. The labouring classes, as subject to the greatest privations, were of course the greatest sufferers. The disease appeared to increase as the wet weather set in. The remedies employed were lime juice, fresh animal and vegetable food, dry air, ventilation and cleanliness, wine and quinine. When any determination to a particular organ manifested itself, suitable remedies were had recourse to. Of sixty-three cases treated, fifty-seven recovered, and six died.

In the beginning of May, as the winter commenced, a few cases of continued fever appeared. It was in general characterised by great debility, by a pale, shrunk and dejected countenance, feeble and unequal pulse, general excitement, and great nervous irritability; the surface was cold and pale, as if the blood had retired to the internal and vital organs; a low stupor or delirum appeared early, and continued during the progress of the disease. Such cases as put on these appearances soonest, were the most dangerous. Some cases were attended by more free vascular action, the heart and arteries beating more strongly than natural, the heat of the surface increased, the face flushed, and accompanied with headache and giddiness. The nervous excitement was less, there was no delirium; the patient, however, was troubled with great restlessness, anxiety, and oppression. In a few cases, near low and marshy grounds, the fever assumed the remittent form; in no instance, however, has intermittent fever been met with in the colony. The remote causes of the disease appear to have been cold, damp, fatigue, exposure to the weather, indifferent food, the depressing passions, intemperance, and such causes as are generally supposed to give rise to fever in Europe; perhaps infection, as some vessels appear to have arrived on which Typhus prevailed during the voyage. The proximate cause Mr. Milligan is inclined to attribute to Gastro-Enteritic Inflammation. The treatment adopted in the early stages of the disease was the antiphlogistic, with tonics and stimulants in the more advanced.

Rheumatism is occasionally met with during winter and autumn. It appears to be a good deal of a sub-acute or chronic form, and is marked by pains in some set of muscles, increased on motion, sometimes in the head, the nape, shoulders, arms, chest, loins, and so forth. It is generally accompanied by head-ache, loss of appetite, thirst, white

tongue. The vascular action was seldom much disturbed, and increased heat seldom met with. Metastatis to the heart was not uncommon. Mr. Milligan is inclined to attribute the disease in some measure to derangement of the chylopoietic organs. The remedies employed were bleeding, general and local; aperients, diaphoretics, warm bath, narcotics, calomel and opium, colchicums, blisters, issues, moxa, acupuncturation, and finally tonics, such as quinine and arsenic.

A mild form of Cholera showed itself in the month of October, 1832. The fluid ejected by vomiting, and the dejections were bilious: cramps of the extremities attended in some cases; but the disease bore no resemblance in severity to Indian Cholera, and readily subsided under the use of calomel and opium and mild aperients. Weakly persons and children suffered most.

About the middle of October, 1833, Hooping-cough first appeared in the colony. It was imported with a detachment of H. M.'s 26th Regiment, which arrived on the 13th of September from Sydney and Van Dieman's Land. The disease does not appear to have been marked by any peculiarity, with the exception of the following, which deserves to be recorded: a short time previous to the commencement of the disease, the patient was often attacked with a vesicular eruption on the head, face, chest, abdomen or extremities, bearing all the characters of varicella. In some instances, in which this eruption did not appear, small boils came out as the cough declined.

Notwithstanding every exertion, vaccination had not been introduced during Mr. Milligan's residence in the colony.

Gonorrhœa was met with for the first time in the beginning of 1833, and is supposed to have been introduced from Van Dieman's Land.

No case of Measles, Small Pox, Scarlatina or Syphilis had been met with, and to no Diathesis did the climate appear hostile, but to the Rheumatic.

It agrees with the European constitution, and every description of live stock, and of vegetable production, though collected from different climates, finds there a congenial locality. The annual mean temperature is from 60° to 64°. A great advantage, which the Swan River possesses to the Indian invalid, is its proximity, the voyage from Madras having several times been performed in 25 or 30 days; it is said to be shorter by one half, than either to Sydney or Van Dieman's Land. The society is good and respectable. The best period for leaving India is February, as the intensity of the summer heat in both countries is thus avoided.

Among much other valuable information in Mr. Milligan's elaborate paper, is an interesting account of the Aborigines of the country.

J. H.

No. VII.

Abstract of Lithotomy cases forwarded on various Occasions to the Medical and Physical Society. By F. H. Brett, Esq.

No.	Date of Operation.	Names.	Ages.	Duration of Disease.	Weight of Stone.	Result.
1	March 1829, ...	Kissoonal Hindoo, ...	35 years,	30 years,	754 grains,.....	Died a month after the operation ; his constitution having been much impaired from 30 yrs. of acute suffering.
2	April 1829, ...	Hindoo Brahmin caste, ..	17 ditto,	10 ditto,	495 ditto, ...	Tetanus, which on the 11th day proved fatal.
3	October 1828, ...	Mukkun Brahmin, ...	8 ditto,	3 ditto,	130 ditto, ...	Successful.
4	Ditto,.....	A Hindoo child, ...	4 ditto,	2 ditto,	191 ditto, ...	Successful.
5	February 17, 1830,..	Dhunneea Hindoo, ...	5 ditto,	2 ditto,	116 ditto, ...	Successful.
6	October 1829, ...	A Hindoo child, ...	7 ditto,	2 ditto,	110 ditto, ...	Successful.
7	April 1829,..... .	Moosulman child, ...	3½ do.	1 ditto,	77 ditto, ...	Tetanus, which proved fatal the 2nd day.
8	April 21, 1831, ...	Peetum Hindoo, ...	6 ditto,	5 ditto,	Ditto, ...	Successful.
9	November 3, 1831,...	Khoounn Hindoo, ...	7 ditto,	1 ditto,	2 Drachms, 12 grains, ..	Successful.
10	November 22, 1831,	Jissoon Moosulman, ...	6 ditto,	2 ditto,	2 Drachms, 55 grains, ..	Successful.
11	December 9, 1831, ..	Bhojjooa Hindoo, ...	8 ditto,	5 ditto,	1 Drachm, 42 grains, ..	Successful.
12	December 21, 1831,..	Zoorra Hindoo, ...	25 ditto,	8 ditto,	5 Drachms, 52 grains, ..	Successful.
13	January 28, 1832,....	Muna Brahmin, ...	3yrs.9m.	2 ditto,	25 grains, ...	Died of Peritonitis 2nd day.
14	January 28, 1832,....	Ghoolaum Moosulman,	..	..	2 Oz., 6 drs. 2 scruples,..	Successful.
15	April 14, 183?,.....	Brahmin, ...	60 years,	11 ditto,	5 Drachms, 16 grains, ..	Successful.
16	May 26, 1832, ...	Nurla Hindoo, ...	12 ditto,	4 ditto,	2 Ounces, 6 drs. & 24 grs.	Successful.
17	July 2, 1832, ...	Bhumna Hindoo,.....	18 ditto,	6 ditto,	1 Drachm, ...	Successful.
18	July 11, 1832,.....	Ruhmaun Brahmin, ...	30 ditto,	1 ditto,	1 Drachm, 50 grains, ...	Successful.
19	August 11, 1832,....	Nunda Hindoo,.....	7½ do.	6 ditto,	3 Ounces, 2 drs. & 35 grs.	Successfnl.
20	August 13, 1832,. ..	Jumahir Rujpoot, ...	14 ditto,	7 ditto,	Ditto.	Successful.
21	August 13, 1832,....	Sullace Hindoo, ...	23 ditto,	10 ditto,	1 Drachm, 35 grains, ...	Successful.
22	August 23, 1832,....	Choonya Hindoo,.....	9 ditto,	4 ditto,	4 Drs. 42 grs., ...	Successful.
23	September 1832, ...	Poosu Tilie, ...	60 ditto,	8 ditto,	..	Died of Hemorrhage, from an irregular distribution of the Intl. Pudic Artery, which was very profuse.
24	September 1832,....	Kuyan Dhanook, ...	26 ditto,	5 ditto,	..	Successful.
25	October 1832, ...	Kurreen, ...	60 ditto,	..	..	Successful.

(Table No. VII. Continued.)

No.	Date of Operation.	Names.	Ages.	Duration of Disease.	Weight of Stone.	Result.
26	November 6, 1832, ..	Nulloo Munneegur,.....	26 yrs.	..	Forwarded to the Medical Society.	Successful.
27	November 6, 1832,..	Sew Ghoolaum Brahmin,	16 ditto,	..		Successful.
28	November 7, 1832,..	Gunga Pershaud Brahmin,	7 ditto,	..		Successful.
29	November 8, 1832,..	Alier Khan Paethan, ...	69 ditto,	..		Successful.
30	November 9, 1832,..	Gungan Rujpoot,..	5 ditto,	..		Successful.
31	December 4, 1832....	Shema Dhanook,.....	60 ditto,	..		Died of Peritonitis 3rd day.
32	December 7, 1832, ..	Duela Burhaee, ...	26 ditto,	..		Successful.
33	December 8, 1832, ..	Soobba Kissun, ...	5 ditto,	..		Successful.
34	December 10, 1832,..	Dhunna Moosulman, ...	15 ditto,	..		Successful.
35	December 26, 1832,..	Bheekarie Chumar,.....	6 ditto,	..		Successful.
36	December 1833.	Hindoo Rujpoot,.....	4 ditto,	..	240 grains,.....	Successful.
37	March 1834,.....	Chidd Baghban, ...	6 ditto,	2 years,	83 ditto, ...	Successful.
38	March 1834,.....	Rumdeal Jat, ...	17 ditto,	5 ditto,	505 grains, (3 smooth Calculi.)	Died of Peritonitis on the 4th day, followed by exhaustion of the vital powers.
39	March 1834,.....	Sewa Aheer,.....	9 ditto,	4 ditto,	114 grains,.....	Successful.
40	April 1, 1834, ...	Tulphie Lodhie, ...	60 ditto,	5 ditto,	235 ditto, ...	Successful.
41	April 11, 1834,.....	Cheta Baghban, ...	11 ditto	3 ditto,	143 ditto, ...	Successful.
42	May 25, 1834, ...	Kulloo Hindoo, ...	5 ditto,	3 ditto,	50 ditto, ...	Successful.
43	May 26, 1834, ...	Desraj Rujpoot, ...	19 ditto,	7 ditto,	200 ditto, ...	Successful.
44	August 1834, ...	Choonchoo Koomuchun,	30 ditto,	3 ditto,	3 Drachms and 11 grains,	Successful.
45	October 21, 1834,....	Sookla, M. Rujpoot, ...	7 ditto,	2 ditto,	4 Drachms, ...	Successful.
46	November 16, 1834,	Heera Bannea,.....	8 ditto,	3 ditto,	4 Drachms and 41 grains,	Successful.
47	Ditto ditto, ...	Elau Bux, Moosulman Rujpoot.	8 ditto,	7 ditto,	3 Drachms, ...	Successful.
48	Ditto ditto, ...	Goolooa Mehter,.....	14 ditto,	10 ditto,	4 Drachms and 12 grains,	Successful.
49	Ditto ditto, ...	Ipundoo Durzie, ...	7 ditto,	1½ ditto,	2 Drachms and 40 grains,	Successful.
50	December 9,.....	A Chumar, ...	28 ditto,	10 ditto,	1 Ounce and 36 grains, ..	Doing well under care of Assist. Surgeon F. Thompson.
51	December 10, ...	A Moosulman boy, ...	11 ditto,	1 ditto,	53 grains, ...	Ditto ditto ditto.
52	December 18, ...	A Moosluman Fukeer, ..	60 ditto,	12 ditto,	ʒ ij. ʒ iv.....	Ditto ditto, under care of Dr. Bell, Cameronians.

No. VIII.

Case of Dislocation of the Os Humeri, in which reduction was effected after a lapse of one month and four days. By Mr. Reid, Apothecary, Colingah Dispensary.

Kussiall, a mathur by caste, about 30 years of age, presented himself at the Colingah Dispensary on the 26th May, with a dislocation of the right shoulder-joint. The head of the Os Humeri was distinctly felt in the axilla. The man stated the accident to have happened a month and four days before; but considering the vague and unsatisfactory account natives give upon such occasions, it may be presumed that it was of much longer standing; particularly so, as the limb had acquired some degree of mobility, and the arm could be nearly approximated to the side. In consequence of the facility with which luxations are reduced in natives, it was deemed proper to attempt a reduction: with this view the heel was placed in the axilla, and considerable extension was made first by Dr. Bramley, and then by myself, but without success. The patient was then placed in a chair, and the scapula being fixed with a proper bandage, extension was tried by means of a sheet folded longitudinally, and kept up for several minutes by four tolerably strong men, but still without success. I therefore determined to have recourse to the pulleys. A strong piece of tape, four or five times doubled, was fixed on the arm, the soft parts being protected by a calico roller, previously wetted. The pulleys being adjusted, 2 grs. of Ant. Tart., in an ounce of water, was administered, and after a short interval, extension was gradually made for about eight minutes, when the tape gave way; still I was unwilling to abandon the object in view. I gave two more grains of Tartar Emetic, and after fixing a strong sheet, I again commenced gradual extension, which I kept up for 22 minutes, when I was agreeably surprised to find that the head of the bone had slipped into its natural position. The arm was then put into a sling, soap plaster and bandage applied to the shoulder, and the man was permitted to go to his residence. The following day he did not attend at the Dispensary, but the day after he did, and having satisfied myself that there was no unusual degree of inflammation, I replaced the bandage, and he is now doing as well as I could expect.

No. IX.

From Assistant Surgeon Spry, Offg. Medical Store-keeper, to J. Swiney, Esq. Superintending Surgeon, Medical Depôt Office, 7th January, 1831, regarding the Manufacture of Glauber's Salts.

1. In conformity with the instructions of the Board, as contained in their letter to you under date 4th November, 1830, I have the honor to report to you that 800 lbs. of the Glauber Salts have been manufactured at this Depôt, to meet present demands.

2. In connection with this subject, I proceed to lay before you the following details, in the collection of which no efforts have been spared to render them as accurate, and I trust as comprehensive, as the Board might wish. In the analytical part, I consider myself much indebted to Dr. Campbell, of the firm of Bathgate and Co., for the able assistance he has rendered me.

3. The salts are prepared from a mineral earth, known by the name of Khare Muttie ; Khare being the Arabic word for Alkali, and Muttie, the Sunscrit word for earth.

4. The only use made of it by the natives of Oude, as far as I can ascertain, is as a condiment ; they give it to their sheep, mixed in the food, but to no other animal. It is supposed to have the effect of fining the fleece.

5. The face of the country whence it is brought is flat, and intersected by deep ravines. It abounds in the neighbourhood of Onaoo, a town about 10 miles from the banks of the river Ganges, and is brought to me in hard striated masses, mixed with sand.

6. In rendering the salt free from impurities, little difficulty is experienced. The process adopted by the natives in this part of India is both easy and simple. It consists in boiling the Khare Muttie in little more than its weight of water, the whites of eggs having been previously beaten up and mixed with it, until a pellicle forms. It is then allowed to stand for about half an hour, that the impurities may subside ; after which, the supernatant liquor is set aside to crystallize. This process is repeated to free the crystals from any remaining impurities, and the salt is then laid apart for use.

7. Two pounds of earth, treated in this manner, yield one pound of pure Glauber Salts. A specimen of the salt, in its natural and manufactured states, I have the honor to transmit to you.

8. A series of analytical experiments were continued for seven days, and from the results which have been obtained, 200 parts of Onaoo earth were found to consist of,

Dried Sulphate of Soda, ...	145.	90
Dried Muriate of Soda,.....	6.	10
Alumina, ...	25.	0
Oxyde or Carbonate of Iron, ...	1.	5
Siliceous Earth,.....	9.	0
Trace of Lime, ...	1.	0
Loss, ...	11.	5
	200.	

9. The regret I should have felt at not being able to state from my personal observation, the capabilities of the different districts in the dominions of Oude, to furnish a supply to meet any demands the Board might be pleased to determine on, has been removed by the circumstance of you yourself, having had satisfactory proof during your recent tour of Hospital Inspection through that country.

10. The expence incurred in the manufacture of 800 lbs. has been as follows:

1000 lb. of Khare earth, with carriage hire,	37	8
40 maunds of fire-wood, with coolie hire, eggs, and earthen pans, ...	112	8
	150	

or 3 annas per pound avordupois.

11. In searching for information regarding the existence of Sulphate of Soda, in a natural state, when first entering into the present inquiry, I was disappointed at finding only a short paragraph devoted to this article, in the Materia Indica, lately published by Mr. Ainslie, of the Madras Medical Service. It is to this effect, "that Dr. F. Hamilton, in his MSS. account of the District of Purneah, alludes to a coarse kind of Glauber Salt being brought from Patna, and called Khare Neemuck:" but, adds Mr. Ainslie in a note: "It is to be presumed, that it is a very impure sort." Dr. Hamilton does not say whether it is prepared at Patna, or found native, which it often is in combination with Oxyde of Iron, and Muriate and Carbonate of Soda, and sometimes effloresced on the surface of the soil, as in Hungary, and with this he dismisses the subject. I perceive Dr. Ure mentions that

large quantities of it exist under the surface of the earth in Persia, Bohemia, and Switzerland.

12. In drawing up this short report, it has been my anxious endeavour to render it as perfect as possible; and I trust it will prove satisfactory, and merit your approbation.

I have, &c.

(Signed) H. H. SPRY,

Assist. Surgeon, and Offg. Med. Store-keeper.

(True Copy)

JOHN SWINEY,

Superintending Surgeon, Cawnpore Division.

Dr. Campbell states, that the Khare Muttie exists in large quantities in the Oude territories, and it is so rich as to yield by the common process of purification and crystallization full 50 per cent. of fine Sulphate of Soda.

No. X.

A letter from N. Wallich, Esq. M. D. enclosing some Seeds, and a short account of the properties of the Quisqualis Indica.

Mr. George J. Gordon has sent me some seeds in a letter, dated Singapore, the 14th January, from which I extract the following passage:

"I enclose a specimen of a worm seed which is in general repute here for expelling either lumbrici or ascarides. It grows in Java, but on what description of plant no one here can tell me. As it is easily taken by children, pounded up with a little sugar, and has no violent effects, it might form an useful addition to the Materia Medica. Five or six seeds are used for a dose. It is known by the name of Sunsung Aroos; but whether that be Javan, Malayan, or Portuguese, I cannot tell you."

Dr. Oxley's note to Mr. Gordon, concerning the above seeds, I do myself the pleasure of enclosing.

"The seeds are those of Quisqualis Indica, an odd name given to the plant by Rumph. in his most valuable Herbar. Amboinense, vol. v., p. 71, tab. 38, in which he greatly extols the virtue of the seed as a Ver-

mifuge. It appears that old Rumphius introduced the plant from Celebes, Balee, and Macassar, into Amboyna. I believe it is now common in all the Malay Archipelago ; I have seen it both at Penang and Singapore, and likewise in the Burma countries."

We cultivate the plant with great ease in this garden. It is a good bearer, and I can supply abundance of seeds in the proper season, if they should be found worthy of being extensively employed as medicine.

The accompanying paper contains the seed which Mr. Gordon's letter enclosed.

No. XI.

Case of Laryngitis, complicated with Bronchocele, in which the external application of Croton Oil was successfully employed. By A. Campbell, M. D.

The successful use of Croton Oil, as an external application in Laryngitis, is well known, and the value of that remedy, in the disease, duly acknowledged in Europe. I am not aware that cases of this disease, treated according to the mode practised at the Paris hospitals, have been brought before the Society. The following one, although it stands alone in my limited experience, may be worthy the notice of the Society:

" March 26th, 1834. A table-attendant, aged 19, strong and healthy, complains of considerable pain in the region of the Larynx, with a feeling of extreme tightness, and incessant desire to cough. The voice is weak, unmodulated, and disagreeably hoarse on attempting to speak ; he finds it difficult to produce vocal sounds, but after expiring forcibly, the voice is elicited. There is no fever, or quickening of the pulse. No pain in the thorax, nor are the bronchi affected. Five days ago, he first observed the commencement of the above symptoms, which have continued to increase, until now, when he is nearly ophonic, and much distressed by the constant necessity to cough. There is no pain or fever on firm pressure of the Larynx, nor is there any appearance of inflammation in the pharynx ; there exists a distinct enlargement of both thyroid glands ; the swellings are soft, elastic and fleshy,

each the size of a small apricot; has not previously been affected with goitre, and was not aware of the presence of that disease when he applied for relief. He attributes the Laryngitis to exposure during the night, as he was at the time of attack accustomed to sleep in the open air. The following mixture was directed to be made, and rubbed on the throat for half an hour twice a day.

R. Ol. Croton, ʒ i.
Ol. Olive, ʒ ij.—M.

The throat to be covered with a flannel bandage.

March 28th.—A crop of pustules have appeared on the neck; pain of Larynx diminished; hoarseness continues.

The Croton Oil frictions to be continued.

April 1st.—The external Larynx raw and ulcerated, voice restored to its natural tone; pain gone; goitre remains; discontinue medicine.

April 15th.—Integuments of throat healed, and goitre completely disappeared.

The efficacy of Croton oil in removing Laryngitis is too well known, I believe, to require further corroboration; consequently the interest of this case (if it has any) consists in the manner in which the goitre was affected by the Croton oil. During the removal of the disease in the Larynx, the goitre was apparently unaffected; but at the expiration of 15 days, from the cure of the Laryngitis, and from the suspension of medical treatment, the enlargement of the thyroid glands, entirely disappeared.

Should future trials, with Croton oil, prove, that it is efficacious in removing goitre, the result will be one of great importance, as the enormous expense of Iodine renders its general use, (in countries where goitre prevails to a great extent,) quite out of the question.

I have at present some cases of goitre under treatment with the Croton oil, and as this disease has, since the publication of Mr. Bramley's paper on the subject, occupied a good deal of the attention of the Society, I hope the result, be it success or failure, may interest the members, and add some useful facts, to the few we now possess regarding this disgusting disease.

Nepal, July 22nd, 1834.

No. XII.

Brief Notice of an Operation, which is performed in Persia, for the removal of Opacity of the Cornea. By S. M. Griffiths, Esq. in a letter to Mr. Twining.

In this part of Persia (Tehran) an operation is practised for the cure of opacity of the cornea, which may be worthy of the attention of the Members of the Medical and Physical Society of Calcutta, as it is said to be frequently successful in improving the transparency of the cornea, if not always capable of restoring perfect vision. The object of this operation seems to be, to completely cut off the vascular communication, by excision of a circular portion of the conjunctiva at a small distance from the margin of the cornea, which is accomplished by fixing eight small hooks into the conjunctiva, about a line from the union of the cornea with the sclerotica, quite round the cornea; the operator then raises that part of the conjunctiva by pulling these hooks towards him, and with a pair of scissors, he cuts off the portion thus raised, and completely insulates the conjunctiva covering the cornea, the consequence of which is the gradual absorption of the opacity of the part affected, and the cornea recovers its transparency. The after-treatment is very simple, consisting merely in the introduction of a small quantity of antimony between the lids; in fact the result of the operation is confidently expected to be successful without any other application.

Tehran, 2nd June, 1834.

No. XIII.

Meteorological Register, kept on board the Experiment Steam flat, during a voyage from Calcutta to Allahabad, by J. W. Knight, Esq.

Dates.	7 A. M.	Noon.	2 P. M.	Sunrise.	Winds, Morning and Evening.	Remarks on the Weather.
April 22nd,				90	S. W.	Violent north-wester at night.
23rd,	76°	84°	83°	76	N. E. by E.—E. by S.	Cloudy morning, smart shower in the afternoon.
24th,	77	84	94	84	N. E. ½ E.—E. by S.	Fine, clear.
25th,	78	88	88	88	S. by E.—N.W.byW.	Ditto, ditto.
26th,	77	85	86	74	N. E. ½ N.—S.W.½S.	Smart partial showers about 3 P. M.
27th,	75	78	80	80	E. by S.—S. E. ½ S.	Heavy fall of rain from 6 till noon.
28th,	74	81	85	86	S. W. by S.	Cloudy.
29th,	72	82	84	85	boxing the Compass. E.	Violent storm before day-break; fine day.
30th,	74	85	88	88	S. by W.	Fine, clear.
May 1st,	74	83	87	86	N. E.—S. by W.	Strong breeze ; fine day.
2nd,	78	88	88	88	round the Compass. N.byE.	Fine, clear.
3rd,	74	83	85	86	Variable, N. by E.	Ditto, ditto.
4th,	75	87	89	78	N. E.	Most furious hurricane from the N. W. at ½ past 5 P. M.
5th,	74	84	85	88	N. E.	(Temperature of hot well, Seetacoond, 133° ; fine clear.)
6th,	75	88	93	92	E. N. E.—N. N. E.	From 3 to 5, the Thermometer was at 98° and 100°.
7th,	76	88	91	91	N. E.—N. N. E.	Fine, clear.
8th,	78	86	88	87	S. E.	Strong breeze ; cirro-stratus.
9th,	76	87	89	85	E. S. E.	Ditto, ditto.
10th,	76	87	87	87	S. E.	Thermometer at 10 P. M. 94° ; fine, clear day.
11th,	79	88	90	90	N. E.—N. N. E.	Fine, clear.
12th,	83	83	84	92	S. S. W.—N. N. E.	Fine, clear, strong breeze at night.
13th,	85	93	95	94	N. E.—N. N. E.	Fine, clear weather.
14th, 86° anchored in the Jumna, off the Fort of Allahabad, at ½ past 7 A. M.						

The foregoing register shows the temperature of the atmosphere in the cuddy of the Experiment flat, which is in the after part of the vessel, and has a thin deck ; above which was a canvas awning. The temperature on deck was in general from 2 to 3 degrees higher than in the cabins.

There were 34 men and one woman (military detachment) on board, who were accommodated in the centre of the vessel, in a room 28 feet long, by 17 feet broad, and 4½ feet high, across which were 2 large beams which reduced the cubic space for each man to $56\frac{2}{3}\frac{9}{5}$ cubic feet. This space receives air and light by 12 hatchways, of which eight were always open ; there are no side ports or other means of ventilation, except the hatchways, and one port, which influences ventilation indirect-

ly, i. e. through the non-commissioned officers' room. Mr. Knight considers the space and ventilation insufficient for the number of men who were embarked. It is less than in line of battle ships on the lower deck, when the men are all in their hammocks, as there are then estimated 120 cubic feet for each man; and at sea, one watch being always on deck, but leaving their hammocks below, the space for each man would be double. However the detachment enjoyed good health, there being but few acute diseases, and those were readily cured.

No. XIV.

To W. Panton, Esq. Superintending Surgeon, Western Division.

Sir,

In complying with your request for information regarding the scorbutic affection prevalent in this part of the division, I regret that the little I have to communicate is so unsatisfactory. The disease first made its appearance at this place about the month of March, 1833, and till lately, has prevailed among the men of the Mhairwarrah Local Battalion, the native inhabitants at Beawr, and in the district.

Although from all accounts, it has assumed a milder form here, than at Nusseerabad, it has however been very general; and there was scarcely a man in the corps who had not spongy, hard, and painful gums: but the men thought nothing of it, and continued to do their duty. A few only presented themselves for Medical treatment, who, in addition to spongy gums, had swelled and painful joints, pain in the lumbar region and extremities, and loss of appetite. The bowels continued natural, the pulse was slow and small, the surface cold and pale; there was general debility, and altogether the patient displayed a chlorotic aspect. In only two instances was the disease accompanied by burning in the feet. I have only farther to add, that although few who simply had scorbutic symptoms came to Hospital, that other cases, such as those of fever, appeared to me, to be much influenced in their symptoms and progress by the prevalent diathesis, and that in all the period of convalescence was more than usually protracted.

I confess that I am altogether at a loss to assign a cause for this anomalous affection. Whether it may be attributed to any thing peculiar in the climate, induced by the drought continued at this place for nearly two years, or whether the water, always containing much saline matter, has from the same cause, been so concentrated as to become hurtful to those drinking it, I know not.

Some have thought, that owing to the high price of grain, the men, especially those with large families, have had a deficient supply of food, and that of a depraved quality, and that therefore insufficient nourishment was the cause of the affection. But the disease appeared here long before the scarcity, and after the scarcity, many who could still afford to live well were affected. Besides, the grain sold in the bazars appeared always to be of good quality.

As regards the treatment of this disease, I am sorry to say that I have not been able to discover any method, that was followed by success. Lime juice, tonics, sarsaparilla with guiacum, I tried without benefit. From the perfectly chlorotic state of three cases, I was induced to make a trial, in them, of a regular course of iron, giving wine at the same time; but it proved to be of no use.

A few of the worst cases proceeded to their homes, others gradually recovered, so as to be able to return to their duty, and now I am happy to say, that since the fine rains we have had, a general improvement has visibly taken place, and I trust, that ere long, the disease will entirely disappear.

No. XV.

Description of a Post Mortem Examination of a Tiger. By Dr. Benza, Surgeon to the Honorable the Governor of Madras.

The subject of the case was a full-grown male, which died in the Government Park at Madras. This animal for some days before his death had refused his food, and appeared very ill; his breathing was deep and quick, he was hot and feverish, and his belly tense and painful. In this state he remained for several days, never attempting to change his position, passing no fæces, and scarcely any urine. The body was examined twelve hours after death. The abdomen contained about five pints of very offensive thin yellow fluid. The abdominal and visceral peritoneum were highly inflamed. The ilium for about three inches of its lower third was swollen, and converted into a hard tumour, having six perforations through its coats; the widest (more than three lines in diameter), was closed by a portion of bone, and sharp pointed spiculæ were seen projecting through the other foramina: the colon and ilium were much contracted. Within the swollen part of intestine were many loose pieces of bone, and a round ball formed of several angular bits of bone, agglutinated and bound together by a kind of net-work of hair and wool. This ball adhered slightly to the intes-

tines by means of an adventitious tissue, which was highly injected. Dr. Benza remarks on the singular anomaly of finding undigested bones so low down in the intestine of an animal possessed of such digestive power as the tiger, and accounts for it by supposing, that these pieces of bone became entangled in the stomach with the wool and hair of the sheep, which formed the ordinary food of the animal; these latter substances being more indigestible than the bones, covering them with a sort of felt coat protected them from the action of the gastric juice, and thus the whole ball passed down unchanged into the intestines. At length this ball being deprived of the greater portion of its woolly covering, the spiculæ became exposed, and protruded against the intestine, greatly irritating it, thereby causing a thickening and constriction, by which the pieces of bone were held in one position, until they produced ulceration. Dr. Benza's account was accompanied by a preparation of the perforated intestine.

No. XVI.

Case of reduction of a Dislocated Shoulder of one month and four days' duration. By Mr. Reid, of the Park Street Dispensary.

The subject of Mr. Reid's case was a Hindoo, 30 years of age, who came to the Colingah Dispensary on the 26th of May, with a dislocation of the right shoulder joint: the head of the os humeri was distinctly felt in the axilla. The man stated the accident to have occurred a month and four days before; but Mr. Reid doubts whether it was not of longer standing, as the limb had already acquired some degree of mobility in its new position, and the arm could be nearly approximated to the side. An attempt was at first made by Mr. Bramley to reduce the dislocation by placing the heel in the axilla, and extending by manual force, but in vain. The patient was then placed in a chair, and the shoulder having been fixed by a proper bandage, extension was made by four strong men, by means of a folded towel, with no better result; the pullies were therefore applied, and two grs. of tartar emetic in solution administered; the extension was kept up for eight minutes, when the tape gave way. Mr. Reid, however, unwilling to abandon the object in view, gave two more grs. of tartar emetic, and again commenced gradual extension; at the expiration of 22 minutes, he was agreeably surprised to find that the head of the bone had slipped into its natural socket, and in a few days, the man was perfectly well.

No. XVII.

Register of Lithotomy cases performed at Benares. By R. Burnard, Esq. continued from April, 1833.

No.	Name.	Age.	Residence.	Date of operation,	Result.	Weight of calculus.	Composition.	Remarks.
				1833.	cured			
34	Ramlal Baniya, ...	7 years,	Benares, ...	28th May,..	24th June,..	2 oz.	Chiefly phosphate of lime, with triple phosphate.	Stone broke into numerous fragments.
					cured			
35	Juggun Aheer,.....	5 years,	Dunos, 5 Kos N. of Benares.	22nd Aug..	13th Sept..	1 dr. 32 grs.	Lithic acid, with oxalate of lime.	
					died			
36	Bhaggarut Brahmun,	38 years,	Benares, ...	26th Sept...	28th Sept..	3 drs.	Ditto ditto.	Died of irritation.
					cured	2 calculi		
37	Jutna Aheer, ...	5 years,	Juanpoor, ...	25th Nov...	31st Dec. ..	9 drs. 40 grs.	Triple phosphate.	
					cured	2 calculi		
38	Deepun Sing Rajpoot,	11 years,	Sasseram, ...	17th Dec. ..	6th Jan. .34	9 drs. 16 grs.	Triple phosphate, with lithic acid.	This boy had formerly been operated on by a native near Hazareebagh.
				1834.	cured			
39	Sukhtoo Medla, ...	17 years,	Tande, near Lucknow,	25th Jan. ..	16th Feb. .34	1 dr. 46 grs.	Oxalate of lime.	
					cured			
40	Ramlait Kulwar,....	11 years,	Sasseram, ...	..	28th Feb. ..	2 drs. 11 grs.	Ditto.	
					cured			
41	Boodhoo Telee, ...	11 years,	Mirzapoor, ...	28th Feb. ..	26th March,	1 dr. 40 grs.	Do. with trip. phosphate.	
					cured			
42	Sewnarain Kait, ...	5 years,	Benares, ...	6th March,	27th March,	3 drs. 18 grs.	Triple phosphate, with perhaps a little oxalate of lime.	
					cured			
43	Comrao Koormee, ..	21 years,	Banda, ...	10th Sept...	25th Oct. ..	13 drs. 25 grs.	Triple phosphate, with little lithic acid.	
					died			
44	Nebeea Chumar, ...	11 years,	Doorbee, 9 Kos N. of Benares,	7th Oct. ..	31st Oct. ..	4 drs. 20 grs.	Oxalate of lime.	
					cured			
45	Meer Hoosain Alee,	35 years,	Azimghur,.....	6th Nov. ..	21st Nov. ..	5 oz. 3 drs.	Triple phosphate*, and fusible.	
				1835.				
46	Domun Rajpoot, ...	6 years,	Chuenpoor, 30 Kos S. E. of Benares,	24th Jan. ..	..	2 drs. 55 grs.	Triple phosphate, with a little oxalate.	Doing well.

* No. 45.—This was a case sent to me from Azimghur, whither he had been carried for relief from retention of urine : the disease had existed 20 years; the prostate was much enlarged and of scirrhus hardness, the stone adherent at its upper part to the bladder, and the bladder itself much diseased ; the man appeared to die chiefly from irritation of the stomach and digestive organs. The body was not examined.

No. XVIII.

Description of a Cluster of Encysted Tumors. By W. Twining, Calcutta, June 20th, 1835.

The accompanying preparation of a cluster of encysted tumors, (or rather of an encysted ovarian dropsy,) which is presented for the inspection of the Members of this Society, was obtained from a subject that was sent to the General Hospital in a state of insensibility at the termination of fever, and survived only a few hours after admission. The mass of tumors, in a recent state, was larger than a man's head, and nearly of the same shape; the preparation has shrunk much in drying. The situation was at the posterior and upper part of the fundus uteri, inclining towards the right side; the uterus being drawn upwards by the tumor rising out of the pelvis, and occupying the lower abdominal region, so as to resemble the uterus in the seventh month of pregnancy. These tumors contained a limpid transparent fluid, coagulable by heat, producing an alkaline re-action with chemical tests, and in other respects resembling the serum of the blood. The cysts which make up this tumor are six in number, and they are of various sizes, above $\frac{3}{4}$ of the whole bulk being occupied by the two largest; and they are so adapted and attached to each other as to give the external appearance of one tumor composed of several cysts, the largest of which was not only attached to several of the other cysts, which seemed indented into it, but a peduncle of root, which in the recent state was the size of a small quill, passed through the cavity of the next largest cyst, and was attached to its interior on the opposite side. The walls or coverings of the whole of the cysts were thin and membranous, but tough and strong like the peritoneum, by an extension of which they appeared to be formed.

The whole tumor was loose and movable, being connected only for a space about half the size of the palm of the hand, to the back part of the uterus, the attachment extending towards the right ovarium. The abdominal enlargement was said to have existed for several years, but no detailed account of its progress or symptoms could be obtained.

I beg leave to take this opportunity of suggesting to the Society, the interest that would arise from a series of observations on the nature of *pendulous tumors* of the mesentery and other parts of the abdominal viscera, which are not uncommon in this country. A detailed history of a few of these cases, comprising an account of their origin, and of the state of the general health, as well as of any particular diseases of the intestinal canal which may have preceded the appearance of the pendulous and movable tumors now alluded to, together with a detail of the external character of the tumors, and the effects produced on the

patient's health, would prove a highly interesting and valuable addition to the details of oriental pathology, already collected and published by this Society.

The tumors to which I allude consist of two descriptions. The most numerous are globular or ovoid in shape, leaving to the feel a smooth exterior, and in bulk varying from the size of a pigeon's egg, to that of a very large orange. These tumors are exceedingly movable, and possessing little sensibility when pressed, they do not cause much inconvenience to the patient.

The other description of pendulous tumor is more uneven or tubercular on the surface, and acquires a degree of transient morbid sensibility when much handled or pressed by repeated examinations. These are not always so easily movable as the smooth tumors. Both the descriptions of disease now mentioned, though usually appearing in persons who have been long subjected to intestinal irritation or chronic disorder of the digestive organs, are very different in their external characters from the chronic indurations of the great intestine, which take place after dysenteric affections, and various descriptions of chronic gastro-enteritis, usually termed dyspeptic.

No. XIX.

A Topographical and Statistical Account of St. Helena. By Dr. McRitchie, Medical Staff of that Island.

Dr. McRitchie states the Island of St. Helena to be situated in 16° 55′ south latitude, and 5° 43′ west longitude; length 11, breadth 7, circumference 28, miles; surface in acres 30,300: the exterior in almost all places nearly perpendicular, containing a great number of lofty eminences, the highest of which (Diana's Peak) is 2,697 feet: many others are nearly as high, considerably exceeding 2,000 feet. With regard to its Geology, the author writes on the authority of Mr. Bloxam, that the cliffs which surround the island consist principally of rugged and steep banks of lava, many of them regularly stratified by successive layers of volcanic matter, amongst which in some places veins of a red sandy appearance are visible. The valleys and ridges in the interior are composed of basaltic lava in its most compact state, together with cellular, and many other varieties in every stage of decomposition. All the valleys and intermediate ridges appear to concentrate into one large basin on the south side of the island, which is evidently part of a volcanic crater, from whence this island has been formed. The ridge called Diana's Peak forms one edge of this crater, inclining gradually towards the sea, whence it is concluded that the remaining ridge necessary to complete

the crater is buried beneath the ocean. The volcanic matter and lava appear to have flowed from this immense crater in every direction, and to have formed the ravines and valleys and intersecting ridges of the island. The edge of the crater from Diana's Peak round to the opposite side is well defined. There is no appearance of any other crater in the island. In cutting away the lava at Saddle Hill, many feet below the surface, small bones have been found incrusted with stalactite. The author accounts for the existence of these bones by supposing, that the animals may have crept into crevices in the rock, and there died; for if a bed of lava in the liquid state had flowed over them, they would probably have been consumed, and could not have been incrusted with stalactite. The volcanic fire, Mr. Bloxam says, must have ceased at some very remote period; and there is little probability of its ever breaking out again, as the island is small, and the combustible matter appears to be entirely consumed.

The minerals of the island belong to the family in which silex predominates, to the calcareous and to the argillaceous families, to the mineral ore containing iron, and lastly, to lava. Silex in the shape of quartz is rarely found: chalcedony and jasper and opal in small quantities. Pitchstone more frequently, and obsidian or pumice stone very sparingly and very light. Of the calcareous earths, gypsum is found in several varieties; calcareous spar and stalactites of carbonate of lime are not unfrequent. The argillaceous minerals are hornblende, in the form of crystals, embedded in lava. The clays of the island exist in the form of different volcanic masses, in a state of decomposition, varying in color according to the quantities of iron contained; pieces of iron ore are found very rich in the metal. The forms of lava met with are principally close or basaltic, and honey-comb or porous. The highly divided state of the siliceous matter of the soil renders the island almost impermeable to rain and moisture, and in this way entirely prevents vegetation in many places.

The climate is extremely variable. Between the valley of James' Town, which is 60 feet above the sea, and Plantation House, which is 1684, there a is difference of from 8 to 10° of the thermometer. Fires are necessary in the country during the month of July, August, and September; but in James' Town, they would be very disagreeable at any period of the year. The hardy trees of Europe, and of the higher latitudes of Africa, cannot be reared in the valleys, but flourish on the hills in singular association with many tropical plants. The island is frequently overshadowed by a fog, which protects it from the rays of the sun for days together; this, unlike other fogs, is perfectly dry. The cumulus and cirro-cumulus are the most frequent forms of clouds. Thunder

is very rarely heard at St. Helena, but lightning is common in dry weather.

There are more than 160 excellent springs on the island, the hourly discharge of waters from four of the principal ones, (situated from 589 to 650 ft. above the sea,) in January, July, and December, was 3,600 gallons, the temperature of the water 69½°, and during a most severe drought in 1824 and 1825, the number of springs which totally failed did not exceed four or five. The maximum temperature at Plantation House is 73°, minimum 59°; at Longwood, minimum 57°, maximum 74°; James' Town, maximum 82°, minimum 71°. The variations of the Barometer are extremely small. The quantity of rain which fell in 1826, at Plantation House, was 40 inches, at Longwood 39 inches, at James' Town 8 inches $\frac{5}{10}$. Few opportunities occur at St. Helena of observing the fall of dew very accurately, owing to the light showers and mist with which the island is constantly overshadowed. The prevailing winds are from the S. and S. E., from the W. less frequently, and from the N. very seldom. The population of St. Helena in December, 1834, was 4,977, being 2,113 whites, and 2,864 colored people. The average number of deaths annually appear to be about 80. The total number of admissions into Hospital of the troops on the island, during the last four years, were 1,980; the strength of the Garrison being about 800. The total number of sick of all classes admitted into the General Hospital during the same period, including the troops, was 2,669, of whom 2,606 recovered, and 60 died. The fatal cases were principally pulmonary, hepatic, and bowel affections. The prevailing mortality assimilates closely to that of Great Britain, especially in the frequency of pulmonary affections. These diseases are most fatal to the lower classes. The diet of those people consists chiefly of rice and fish, and a good deal of salted meat, and they are much given to the use of spirits and tobacco. Scrophula is a disease well known in St. Helena. Dr. McRitchie states, that blood-letting is highly necessary in the inflammatory and mixed fevers of the island, but the people of color do not bear up so well against the effects of that remedy as Europeans. Rheumatism, Gout, and Nephritic affections, Erysipelas, Urticaria, and Varicella, are frequent; but confluent Small-pox is unknown. Measles were very mortal in 1807, since which it has disappeared from the island. Tetanus and Trismus are almost always fatal. Mental ailments are not uncommon. Elephantiasis and Lepra frequently attack the people of color. Puerperal convulsions were very fatal in 1824, as well as Croup, and that dangerous modification of sore throat described by Dr. J. Hamilton, jun. in the 2nd edition of his work on female complaints.

No. XX.

Brief Notice of the Aleppo Boil, from S. M. Griffiths, Esq. Surgeon to the Military Staff at Tehran, in a letter to Mr. Twining. Presented, 1st Nov. 1834.

The habits of the natives of this part of Persia are partly European and partly Asiatic. They eat animal food, and drink wine to excess, such of them as can afford it. They smoke the leaf tobacco in the Kulian, and frequently use the Humam, or Oriental Vapor Bath. Their diseases partake of an inflammatory character, modified by the aridity of the climate. One of the most troublesome chronic diseases here is the Aleppo boil: it is most common in persons of a vitiated habit of body; it is of a livid color, but not painful, and is seated in the integuments, and cellular structure near the surface of the body. It is supposed by some of the natives to be contagious; it is remarkable for its slow progress and suppurating without pain: no local application appears to have much effect in promoting the cure. Mr. Griffiths has seen a marked beneficial effect from the use of tonics and mild alteratives. The nature of this disease, and the state of constitution during its existence, deserve a careful investigation.

This appears to be the disease described in Russell's History of Aleppo, as the Hebt al Sinne, or *the Blotch of a year*, and the Haleb-Chiban. The size of this boil does not exceed that of a shilling, and it is seldom cured in less than 8 months.

No. XXI.

Case of excised Spleen. By J. Chapman, Esq.

I have the pleasure to send herewith a portion of the spleen of a native, excised by my friend Dr. McDonell of Purneah; and on his part, beg to present it for acceptance to the Society, for their museum.

The subject of this case, is a stout and healthy man of about 30 years of age, who was gored by a buffalo in the Morung forest, which produced a horizontal wound of about two inches in length, through which the spleen protruded, and remained in that state for six days, when the patient, to seek medical relief, rode into the station, a distance of 14 koss, and put himself under the Dr.'s care. A ligature was in the first instance applied, with the view of interrupting the circulation, and thereby removing the mass; but, on further consideration, he determined to excise the protruded viscus, which being done, and ligatures applied to two bleeding vessels, with simple dressing, and not in the horizontal posture, the case rapidly recovered.

It is now two months since the operation was performed, and the man as yet enjoys his usual health.

No. XXII.

Account of a Human Monstrosity, in the Museum of the Medical College. By H. H. Goodeve, Esq. M. D.

[Presented April 2nd, 1836.]

The following account is drawn up from an examination which I made at the request of Principal Bramley, of the double fœtus which the Society were kind enough to present to the Medical College at their last meeting, 5th of March 1835.

The results of this examination are highly interesting ; the monster affording some very singular anomalies in the arrangement of the viscera.

The attempt to form two distinct children had nearly succeeded: very little more was required to effect it. That little, however, was sufficient to produce a strange complication in some of the important organs, more especially in the heart ; a diversion from the natural structure, which was evidently incompatible with any prolonged existence.

The monster consists of two female children united together in the thorax and upper part of the abdomen by a broad connection, which extends from the sternum to the umbilicus. Below and above these two points all is apparently natural. The heads, necks, arms, lower abdomen, pelvis and inferior extremities of both children are perfect, and the external organs of generation complete. There is only one perfect umbilical cord, but below that is seen a small prolongation about an inch in length and three parts of an inch in diameter. This prolongation is hollow, at the further extremity forming a cavity about the size of a hazel-nut, terminating at the nearer end in a mass of cellular structure. It appears externally like a rudimentary second cord, but its internal structure would almost lead to the supposition that it was rather a monstrous umbilical vesicle.

The length of the whole monster is from 15 to 16 inches ; circumference of the whole 11 to 12 ; circumference of the connecting medium 9 to 10 inches, length of ditto about 4.

Circumference of each head round the forehead and vertex 11 inches. Weight five pounds.

There is a considerable quantity of hair upon the heads and even upon the body and extremities, and the finger and toe nails are perfect. In fact, though rather small, it was evidently born at the full period of utero-gestation.

Upon examining the internal structure, I found one thoracic and one abdominal cavity common to both children, these cavities being divided from each other by a single diaphragm.

The walls of the thorax are composed of a double set of ribs, with two sterni, one on the anterior, and the other on the posterior part of the commissure, so placed that each sternum is common to both children. There is consequently a spinal column to each. The abdominal muscles are likewise double. The abdominal and pelvic viscera of both children are perfect in all things, with the exception of the liver. This organ appears to consist of two perfect livers, united together at their convex surfaces. There are two gall-bladders, one on each side of the centre, two portæ, two hepatic arteries, and two venæ portarum, with distinct cystic and hepatic ducts for each side. Two umbilical veins pass down from the common navel, and separating from each other, they enter the venæ portæ of each division. In their course these vessels, immediately before reaching their destination, pass directly through the substance of the liver for about an inch, and emerging from thence enter the transverse sulcus. Each of these vessels sends off a ductus venosus, which terminates in a separate vena cava. There are four umbilical arteries, two for each child. This arrangement of the liver of course reverses completely the disposition of the abdominal viscera of the right child. The spleen is placed in the right hypochondrium, the pyloric extremity of the stomach looks towards the left side, and the duodenum crosses the spine from left to right. All the other abdominal and pelvic viscera are, as I have before remarked, perfectly distinct on both sides. The single diaphragm is perforated by a double set of the customary foramina; those of the right side being necessarily reversed, to correspond to the disposition of the organs connected with it. Indeed, the abdominal contents are so placed, that their arrangement may perhaps most readily be understood by conceiving the viscera of one child reflected in a mirror to form the viscera of the other.

Of all the organs, however, those situated in the thorax of this monster are the most curious. In the centre of the whole, almost immediately behind the anterior sternum, floating in a capacious pericardium, is a huge heart common to both children. Yet in this, too, there is a partial attempt at the formation of a double organ. Externally there is a slight sulcus running down the centre, corresponding to an imperfect septum within. But in the interior of the organ all is confusion and malformation. The right ventricle on either side opens into a large auricular cavity, common to both, and situated at the upper part of the organ. The opening between these cavities is furnished with a valve, also apparently common to both. From the right ventricle of the left side springs a pulmonary artery, but from

the corresponding ventricle of the right division no similar vessel arises. The only opening into that cavity is through the auriculo-ventricular foramen. The superior and inferior venæ cavæ of both sides empty themselves into the common right auricle. This latter cavity again communicates with a common left auricle by an enormous foramen which may be supposed to represent the *foramen ovale*, but no trace of any valvular arrangement to cover this gap can be discovered;—all is free, and the passage of the blood through it in either direction must have been unimpeded. Into the left common auricle one pulmonary vein from each child terminates. This left auricle communicates with two separate left ventricles. Indeed there is apparently one common opening between all the cavities of the heart. From each of the left ventricles arises a perfect aorta, one passing to the left in the natural course, the other curving to the right to reach the spine of the right child. The semilunar valves of each are perfect, they both give off coronary arteries, and from the arches of either side spring arteriæ, innominatæ, carotids, and subclavians. The single pulmonary artery, viz. that of the left side, is distributed exclusively to the lungs of the left child, and a well formed ductus arteriosus stretches between it and the aorta. The lungs of both children are perfect, and naturally formed. Those of each side are contained in a separate pleura. A thymus gland common to both children is placed in the upper part of the thoracic cavity. The absence of a direct pulmonary artery on the right side is supplied by a branch which arises from the arch of the aorta on its inferior side. In fact, this branch is apparently the ductus arteriosus; the commencement of the pulmonary artery being absent; or perhaps, more properly speaking, the aorta, and the root of the pulmonary artery, have coalesced in the progress of development, forming but one vessel as far as the ductus arteriosus. The true pulmonary artery beginning from thence.

In the brief account of this monstrosity which was sent with it, it is said to have been born at Nursingpore, 15th December, 1833, of a Moosulman woman, who had borne several children previously, all of whom were perfectly natural. The monster is said to have lived for three or four hours after birth. It certainly could not have survived for any considerable time beyond that; and when we regard the malformation of the heart, it is surprising that it should have existed so long. While there was no necessity for breathing, all would have gone on well enough, but with the first respiration its difficulties must have commenced. It must necessarily have been suffocated in a short space of time. The free communication between all sides of the heart, the

huge valveless foramen ovale, and the easy passage of the blood; amongst all, the cavities from one to the other must have produced inextricable confusion in the circulation. The arterial and venous blood must have been so mingled together, that the compound would be totally unfit to perform all the offices of the circulating fluid*.

No. XXIII.

Cases of Rupture of the Spleen and Kidney. By Dr. A. Campbell.

[Presented Sept. 1835.]

The first of Dr. Campbell's cases occurred in a recruit of the Horse Artillery, 22 years of age, who received a kick from a horse on the left side on the 10th November, 1828. He fell to the ground breathless, but sensible; and when brought into the hospital presented all the symptoms of having received some violent internal injury: the respiration was exceedingly difficult; the countenance pale, shrunk and anxious; the extremities cold, and the pulse was not perceptible at the wrist. He moaned frequently. A slight re-action afterwards took place, when he complained of great pain in the region of the spleen and hypogastrium. The next day the abdomen was much enlarged, and fluctuation was manifest; he had again sunk into a death-like condition, and he expired 30 hours after the accident. Upon dissection the abdomen was found to be filled with dark-colored blood. The spleen much above its natural size, was broken on its surface into three separate portions, and resembled a mass of coagulated blood. The other organs were healthy. It is not known whether this individual had previously suffered from enlarged spleen or intermittent fever.

The second case was that of a syce of the Horse Artillery, whose horse reared and fell back upon him, crushing him under his body. The thigh bone was fractured at its upper third, and the patient complained of great pain at the umbilicus and scrobilicus cordis, with laborious respiration and urgent thirst. The pulse small, weak, with natural heat of skin. He continued restless and tortured with pain for about five hours, when he expired. Upon disection the abdomen, as in the other case, was found to be filled with dark-colored blood. The spleen was

* In the Philosophical Transactions for 1748 may be found an account of a double female fœtus resembling this in many particulars, given by Dr. Parsons. It differed from this, however, in their being two separate thoracic, and consequently two hearts.—*Phil. Transactions Abridged*, Vol. XLV. p. 370.

broken into a mass resembling coagulated blood. The left kidney was ruptured along the entire length of its convexity. No external signs of violence were observed; the spleen was of the natural size, but the ruptured kidney was larger than ordinary, and of an unusually pale colour.

For other Papers on this subject, see Appendix No. 4.

PROCEEDINGS OF THE MONTHLY MEETINGS

OF

THE MEDICAL AND PHYSICAL SOCIETY,

HELD AT THE ASIATIC SOCIETY'S APARTMENTS.

JANUARY 3, 1835.

Thomas C. Hunter, Esq., Assistant Surgeon, Bengal Service, was elected a Member of the Society.

Previous to the ballot being taken for the election of a Vice-President, and other Office-Bearers for the ensuing year, Mr. Bramley intimated to the Society his wish not to be re-elected Secretary, in consequence of his being engaged in other duties, which so occupied his time as to render him incapable of devoting that attention to the Society's affairs, which the importance and variety of their details demand.

Mr. John Tytler, in a short address, informed the Society, that as he was about to proceed to sea for the benefit of his health, he was under the necessity of relinquishing the office of Vice-President.

Votes of thanks were unanimously passed, in favor of Messrs. Tytler and Bramley, in acknowledgment of their services, the former as Vice-President, and the latter as Secretary.

The Ballot-box was then circulated for the election of Office-Bearers for the year, when the following gentlemen were found to be duly elected.

Vice-President,	N. Wallich, M. D., F. R. S., &c.
Secretary and Treasurer,	Jas. Hutchinson, Esq.
Assistant do. do.	H. S. Mercer, Esq.
Foreign Secretary,	William Twining, Esq.
Members of the Committee of Management,	Alex. Garden, Esq. Charles C. Egerton, Esq. Duncan Stewart, M. D. Mountford J. Bramley, Esq.
Members of the Committee of Papers,	William Cameron, Esq. Thomas Spens, M. D.
Librarian,	L. Burlini, M. D.

A Specimen of an Aceto-spirituous tincture of Cantharides was exhibited to the Meeting, at the request of D. S. Young, Esq. Senior Staff Surgeon, Nizam's Army.—Vide Vol. VII. Pt. 2, p. 423.

The following preparations were presented for the Museum.

1st. An Urinary Calculus extracted by the natural passage, by D. Stewart, M. D. accompanied with a memorandum of the size of the calculus.

2nd. An Urinary Calculus extracted by the lateral operation, and models of two instruments used by native Lithotomists, by William Bell, Esq. Kemaon Local Battalion.

3rd. Specimens of the Fungus of the Eyelids, extirpated from a native, by C. C. Egerton, Esq. and presented by that gentleman.

The following communications were presented.

1st. Additional notes and cases on the cure of Hydrocele by the injection of a solution of Iodine, by J. R. Martin, Esq.

2nd. Case of Hydrophobia in an European child, by William Twining, Esq.

3rd. Appendix to the case of Dracunculus, presented at the last Meeting, by William Twining, Esq.

The following paper was then read and discussed at the Meeting.

Notes of six cases of Colica Pictonum treated in the Howrah Seaman's Hospital, by D. Stewart, M. D.

FEBRUARY 7, 1835.

Before the commencement of the regular business, one of the sets of Lithotrity Instruments, lately sent out by the Honorable the Court of Directors, with the Lithotrity bed, and percussion apparatus, complete, was exhibited to the Meeting, by permission of the Medical Board.

John Allan, Esq. Surgeon 10th Regt. N. I. was proposed as a Member of the Society, by Dr. Mercer and Mr. Hutchinson.

Letters were read from Assistant Surgeon A. Keir, M. D.; D. McNab, M. D., and Simon E. G. Young, Esq. (the latter of the Madras Service,) requesting that their names might be withdrawn from the list of Members of the Society; which was accordingly done.

A letter was read from Dr. Wallich, presenting some seeds, sent round from Singapore, by Mr. G. J. Gordon. The seeds are said to be in general repute at that place, for expelling Lumbrici, or Ascarides.

Mr. Twining was kind enough to take charge of the seeds, sent round by Mr. Gordon, and to promise the Society a report on their medicinal qualities at a future opportunity.

Mr. Twining's and Dr. Stewart's reports on Mr. Young's Aceto-spirituous tincture of Cantharides, exhibited at the last Meeting, were then read.—Vide Vol. VII. Pt. 2, pp. 427 and 431.

The following works were presented for the Library.

The 3rd vol. of the Journal of the Asiatic Society, by the Asiatic Society.

Du Cholera Morbus, son seige, sa nature, and son traitement, par L. Auzoux, D. M. ; by Dr. Tytler.

Memoire sur le Cyamus Ceti, par M. Roussel de Vauzeme, D. M.; by the author.

For the Museum.

An Urinary Calculus extracted from a boy of 9 years of age, by Mr. Egerton, and presented by that gentleman.

The following communications were presented to the Meeting.

1st. A fatal case of Dysentery, drawn up by James McRae, Esq. Assistant Surgeon.

2nd. Fatal case of Tetanus, with dissection, drawn up by Mr. Roe, Surgeon H. M.'s 38th Regt.

3rd. Five cases of blindness, one congenital and four from early infancy, successfully treated by operation, by F. H. Brett, Esq Assistant Surgeon.

4th. Abstract of forty-nine cases, in which surgical operations were performed during the months of November and December last, by F. H. Brett, Esq. Assistant Surgeon.

5th. Abstract of fifty-two cases, forwarded at different times to the Society, in which the operation of Lithotomy was performed, by F. H. Brett, Esq.

The whole of the above were presented by the Medical Board.

6th. An account of three cases of disease of the Femoral Vein, by J. Mouat, M. D. Surgeon H. M.'s 13th Light Dragoons.

7th. Case of stone in the Bladder, successfully operated on by C. Griffith, Esq. Assistant Surgeon.

The following papers were then read and discussed ; viz.

1st. Additional observations on the cure of Hydrocele, by the Iodine injection, by J. R. Martin, Esq.—Vide Vol. VII. Pt. 2, p. 411.

2nd. Case of Congenital Cataract, successfully operated on, by D. S. Young, Esq. Senior Staff Surgeon, Nizam's Service.

3nd. Case of Hydrophobia from the bite of a mountain squirrel, by W. Dunbar, M. D.—Vide Vol. VII. Pt. 2, Appendix, p. 461.

4th. Case of Hydrophobia in an European child, by William Twining, Esq.—Vide do. do. do. do.

MARCH 7, 1835.

Before commencing the regular business, the Secretary intimated to the Meeting, that, from the high gratification he had experienced in witnessing the experiments performed by Dr. Tytler, in Electro Dynamics, or Magnetic Science, before the Medical Board, he felt anxious that the Members of the Society should enjoy a similar pleasure; that he had accordingly proposed to Dr. Tytler to deliver a lecture to the Society on the subject should the Members desire it, to which that gentleman had kindly consented.

The proposal was cordially agreed to, and an extra Meeting for the purpose was called for Tuesday evening, the 10th instant.

John Allan, M. D., Surgeon, 10th Regt. N. I., was elected a Member of the Society.

The following gentlemen were proposed as Members of the Society. H. Chapman, Esq. Assistant Surgeon to the Right Honorable the Governor General's Body Guard, by Mr. Bramley, and Mr. Hutchinson; —W. Griffith, Esq. Assistant Surgeon, Madras Establishment, by Dr. Wallich and Mr. Twining;—R. C. McConnochie, Esq., and J. W. Knight, Esq. Assistant Surgeons, Bengal Establishment, by Mr. Hutchinson and Mr. Egerton.

Letters were read from Messrs. Beckwith and Co., and Messrs. Arbuthnot and Co., the Society's Agents at Bombay and Madras, forwarding their Accounts Current for the past year; the former exhibiting a balance in the Society's favor of Sicca Rupees 349 2, a hoondee for which sum has been received; and the latter a balance of Madras Rupees 740 13 3, which Messrs. Arbuthnot and Co. have been requested to remit at their convenience.

A farther communication on the Liquor Lyttæ, from Dr. S. Young, of His Highness the Nizam's Service, to the address of the Medical Board of Madras, was presented by the Medical Board of Bengal, and read to the Meeting. Much of Dr. Young's account of this admirable remedy has already been communicated to the Members of the Society. The principal advantages which it possesses over the common Emplastrum Lyttæ are the rapidity and exactness with which vesication can be produced by it, the little irritation which it occasions, the little room it occupies in the medicine chest, it retaining its powers for a comparatively long period, and its being applicable to the most uneven surfaces. It appears, that in 1832, Dr. Young received from Mr. Snowdon of the Haymarket, a few ounces of the Liquor Lyttæ, with the following memorandum. "The Liquor Lyttæ is an aceto-spirituous tincture of Cantharides, and will be found to be a good substitute for a

common blister." There was no formula for its preparation sent; but Dr. Young succeeded in making it. The following is the process adopted by him.

Take of Concentrated Acetic Acid, nine ounces.
Rectified Spirit, three ounces.
Spanish Flies, four ounces.

The Spanish flies to be coarsely pounded, and put into a wide-mouthed glass-stoppered bottle, when the acetic acid and rectified spirit are to be added. Let the whole digest for five days, be exposed to the sun, then strained through flannel and preserved for use. The quantity of the "Liquor" will be about eight ounces. The following, Dr. Young conceives, is the modus operandi of the medicine: "The immediate efflorescence of the skin is in all probability produced by the acetic acid, and a highly inflamed surface is thus presented to the action of the cantharides, by which its operation as a vesicatory is expedited."

The Liquor Lyttæ is now prepared at the Honorable Company's Dispensary, of a quality not inferior to that made by Dr. Young himself.

The following Chemical and Pharmaceutical preparations were laid before the Society by the Medical Board; viz.

A quantity of Caoutchoucine, a liquid substance said to be of a highly inflammable nature, obtained by caoutchouc, or common Indian rubber.

Specimens of the Liquor Lyttæ prepared by Dr. Young, and at the Honorable Company's Dispensary.

For the Library.

Memoirs of the Life and Medical Opinions of John Armstrong, M. D.; with an inquiry into facts connected with Marsh Fever, by F. Boot, M. D.; presented by the author through the Vice-President, Dr. Wallich.

For the Museum.

Specimens of Phosphate of Lime taken from the mesentery of a subject that died of Chronic Gastro-Enteritis, by W. Twining, Esq.

The following original communications were presented at the Meeting; viz.

1st. Observations on the climate and diseases of the New Colony of Western Australia, more especially of the Swan River district; with a brief account of the settlers, natives, soil, productions, &c.; by William Milligan, M. D. Assistant Surgeon, His Majesty's 63rd Regt.

2nd. Additional Report of cases of Cataract and Artificial Pupil, operated on by F. H. Brett, Esq.

3rd. Additional catalogue of cases of Lithotomy on natives of India, by F. H. Brett, Esq.

4th. Further observations on the prevalence of Dracunculus as connected with geological formation, by C. Morehead, M. D., Bombay Establishment.

5th. A fatal case of Fracture, with depression, drawn up by Thomas Oxby, Esq. A. B., Assistant Surgeon, at Singapore.

6th. A fatal case of Rupture of the Spleen, drawn up by Thomas Leckie, Esq. Assistant Surgeon, 4th Battalion Artillery, Dum-Dum.

The two last communications were presented by the Medical Board.

The following Papers were then read and discussed; viz.

Five cases of blindness, one congenital and four from early infancy, successfully treated by operation, by F. H. Brett, Esq.—Vide Vol. VII. Pt. 2, Appendix, p. 463.

Account of three cases of diseases of the femoral veins, by J. Mouat, M. D. Surgeon, His Majesty's 13th Regt. Light Dragoons.—Vide Vol. VIII. Pt. 1, p. 28.

Case of Ulcerated Stricture of the Œsophagus, communicating with the Trachea, by A. K. Lindesay, Esq., Officiating Garrison Surgeon, Chunar.—Vide Vol. VII. Pt. 1, p. 40.

APRIL 4, 1835.

Before commencing the business of the evening, the Secretary intimated to the Meeting that Part 2, of the seventh volume of the Society's Transactions was all but completed, and would be issued to the Members of the Society in the course of the month.

The following gentlemen were elected Members of the Society; viz. H. Chapman, Esq., Assistant Surgeon, Governor General's Body Guard; William Griffith, Esq. Assistant Surgeon, Madras Establishment; R. C. McConnochie, Esq. Assistant Surgeon; and J. W. Knight, Esq. Assistant Surgeon, both belonging to the Bengal Establishment.

C. J. Davidson, Esq. Assistant Surgeon, Artillery, Dum-Dum, was proposed as a Member of the Society by Dr. Stewart and Mr. Hutchinson.

The following miscellaneous communications were then read to the Meeting.

A letter from C. Mackinnon, Esq. Surgeon, 32nd Regiment N. I., requesting that his name might be withdrawn from the list of Members of the Society, which was accordingly done.

A letter from Messrs. Arbuthnot and Co. the Society's Agents at Madras, giving cover to a remittance of Sicca Rupees 703-9 9 in favor of the Society.

A memorandum from W. Twining, Esq., descriptive of a preparation forwarded by him of a Diverticulum of Intestine. The process in question consisted of a sort of Cul de Sac, about four inches in length, projecting from the ilium. It was taken from the body of a subject that had died of chronic gastro-enteritis, by which an extreme degree of emaciation had been produced. The disease of which the patient died was not supposed to be connected in any way with the malformation above-mentioned, nor could Mr. Twining learn that the health of the individual had been at all effected by it.

A letter from J. W. Knight, Esq., descriptive of a beautiful piece of animal mechanism in the first dorsal fin of the Balistes, belonging to the family of Sceerodeimes and order Phlectognathi of the Sub-brachial Malacoptorigians of Cuvier, (Vide p. 134.)

A description by Dr. Stewart of a post-mortem examination of a case of tuberculated liver. The subject was an old Hindoo, who had probably never tasted animal food or spirits in his life. He stated himself to have been only ill for a month. During the few days he remained in hospital previous to his death, nothing of course could be done for him. On dissection the diaphragm adhered firmly to the liver, by which it was forced up, so as greatly to contract the size of the thorax. The liver likewise occupied the whole of that portion of the abdomen above the navel; on removal it weighed 8 lbs. and a half, and measured 14 inches in its long axis, and 9 in the other. It was indurated in substance, throughout of a pale livid, and mottled color, and thickly studded with white or yellowish tubercles of various sizes, from that of a millet seed to that of a filbert. The cystic duct was compressed by a round white hard gland, about the size of a hazel nut; another gland considerably larger, pressed against the ducts near their junction, and several others of a similar nature, were found in the capsule of Glisson. The gall-badder contained a biliary calculus, and the hepatic artery was unusually small. The pancreas was completely disorganised, stretching down the left side of the spine to the brim of the pelvis. It was firmly bound down by the mesentery, and seemed to consist of numerous smooth round hard tubercles. The mesenteric glands were all swelled hard and white, like those in the capsule of Glisson, and were probably in a schirrous state. Dr. Stewart's description was accompanied by a drawing by a promising young artist, Mr. Woolnorth, which will be acknowledged in its proper place.

The following works were presented for the Library:

The second fasciculus of drawings from preparations in the Army Medical Museum at Fort Pitt, Chatham, presented to the Medical Board, by Sir James MacGrigor, and by them to the Medical Society.

A treatise on the Epidemic Cholera, by Alexander Turnbull Christie, M. D., by the Medical Board.

An index to the first eighteen volumes of the Asiatic Researches, by the Asiatic Society.

FOR THE MUSEUM.

A preparation of a Diverticulum of Intestine, by W. Twining, Esq.

A drawing of a tuberculated Liver, by D. Stewart, M. D.

A Biliary Concretion, by ditto ditto.

The following original communications were presented at the Meeting.

A report on the medical management of the Jails, throughout the territories, subject to the Governments of Fort William and Agra, compiled in a great measure from documents in the office of the Medical Board, by James Hutchinson, Esq.

A fatal case of extensive pulmonary and visceral disease, presented by the Medical Board.

The following communications were then read and discussed; viz.

A case of arrow wound of the head, by A. Storm, Esq., Assistant Surgeon.

A case of poisoning by laudanum, in which artificial respiration was had recourse to with advantage, by C. J. Smith, Esq., Madras Establishment.

A case of Ileus in an infant, by D. Stewart, M. D.

Further observations on Dracunculus, by C. Morehead, M. D., Bombay Establishment.—(Vide p. 49.)

MAY 2, 1835.

A copy of Part 2, Vol. VII. of the Society's Transactions, now in course of distribution to the Members, was laid before the Meeting.

C. J. Davidson, Esq., Assistant Surgeon Artillery, Dum-Dum, proposed at last meeting, was elected a Member of the Society.

A. M. Mackenzie Minto, Esq., Assistant Surgeon, was proposed as a Member by R. C. McConnochie and W. Twining, Esqs.

A letter was read from W. Bell, Esq., Assistant Surgeon at Almorah, having reference to a former communication of his, descriptive of the mode in which the native practitioners in that part of the country perform the operation of lithotomy. From Mr. Bell's second communication it more clearly appears, that the operation in question differs little from that known and practised in Europe under the designation of 'cutting on the gripe.' To Mr. Bell's communication is appended the history of a case of preternatural labour successfully treated by 'Turning.'

A morbid preparation of the bones of the pelvis of a quadruped, accompanied by a memoir and two drawings, was presented by Doctor Cantor. In the preparation in question the hip joint has been luxated, the head of the femur forced through the upper portion of the foramen thyroideum, so as to project a little into the cavity of the pelvis, and then fractured from the neck and body of the bone. In this situation it is firmly fixed by a copious deposition of callus. The acetabulum is almost filled with osseous deposit, in the form of tears, and those portions of the ileum-ischium and pubes composing it are much thickened in structure, and very freely perforated with foramina for the transmission of blood-vessels. The upper or schiatic rim of the acetabulum is flattened, and bears marks of having formed a portion of artificial articulation. The ileum and sacrum on the affected side are firmly united by anchylosis. The history of the case is not known; but from these appearances, it may safely be concluded, that the femur was dislocated by a force drawing or propelling it forwards and outwards; that the animal survived the accident for months or years; and that its sufferings must have been severe.

The following works were presented for the Library.

The first No. of the United States Medical and Surgical Journal; by the Publishers.

General Observations respecting Cholera Morbus, by I. N. Casanova, C. M. D.; by the author.

A brief account of the Ophthalmic Hospital at Macao, by J. B. Thornhill, Esq.

Harris de Morbis Acutis Infantum, and Hamilton on the use and abuse of Mercurial Medicines; by Mr. Hutchinson.

The following original communication was presented at the meeting.

A Register of the Lithotomy Cases treated by operation from April 1833, accompanied by fifteen specimens of urinary calculi for the Museum, thirteen of which were extracted by operation, by R. N. Burnard, Esq.

The following papers were then read and discussed:—

Four years' Reports on the Climate and Diseases of the new colony of Western Australia, more especially of the Swan River district, by William Milligan, M. D., Assistant Surgeon, H. M.'s 63rd Regt.—Vide Appendix, p. 6.

A case of Tetanus with post mortem examination, by S. Roe, M. D., Surgeon H. M.'s 38th Regt.—Ditto, p. 5.

JUNE 6, 1835.

A. M. Mackenzie Minto, Esq., Assistant Surgeon, proposed at last Meeting, was elected a Member of the Society.

The following communications on miscellaneous subjects were then read:

A letter from G. King, Esq., Surgeon 56th Regt. N. I., requesting that his name might be withdrawn from the list of members of the Society; which was accordingly done.

A letter from James Prinsep, Esq. returning thanks on account of the Asiatic Society for Part 2, Vol. VII. of the Society's Transactions.

A note from J. Ochterlony, Esq., Superintendant of the *Herald Press*, Madras, stating that he would have great pleasure, in compliance with the Society's request, in causing their proceedings to be republished in the paper under his control.

An extract of a letter from S. M. Griffiths, Esq., dated June 2nd, 1834, descriptive of an operation practised in Tehran, and its vicinity, for the cure of opacity of the cornea.

The object of the operation seems to be completely to cut off vascular communication, by the excision of a circular portion of the conjunctiva, at a small distance from the margin of the cornea. This is accomplished by fixing eight small hooks in the conjunctiva, about a line from the union of the cornea, with the sclerotica, quite round the cornea. The operator then raises that part of the conjunctiva, by pulling the hooks towards him, and afterwards with a pair of scissors cuts off the portion raised, thus completely insulating the conjunctiva covering the cornea. The result is the gradual absorption of the opacity of the part affected, and that the cornea recovers its transparency.

The after-treatment is very simple, consisting merely in the introduction of a small quantity of antimony between the eyelids.

The following works were presented for the Library:—

Three different Pamphlets, containing accounts of various late improvements in the microscope, by Wm. Griffith, Esq., Assist. Surgeon, Madras Service.

The following original communications were presented at the Meeting:—

Observations on the family of Rhizophoreæ, by Wm. Griffith, Esq., Madras Establishment.

Notes on the Mishme Teeta and Pucha Pât, by N. Wallich, M. D., F. R. S. &c. accompanied by specimens of the drugs.

A memorandum on the medicinal virtues of the Mishme Teeta, by Wm. Twining, Esq.

Cases of Gastro-Enteritis, with observations by Wm. Twining, Esq.

Case of Dislocation of the Os Humeri, in which reduction was effected after a lapse of one month and four days, by Mr. Reid of the Colingah Dispensary.

A Meteorological Register kept on board the Experiment Flat, during a voyage to the Upper Provinces, in the months of April and May last, by J. W. Knight, Esq., Assistant Surgeon.

Note on blood-letting in the cold stage, in the treatment of the intermittents of Persia, by S. M. Griffiths, Esq., Assistant Surgeon.

Cursory remarks on the medicinal properties of a plant called by the author the Convolvulus Nil, presented by Col. Cooper, through N. Wallich, M. D.

An examination of the advantages and disadvantages of operating for Cataract, when only one eye is affected, by F. H. Brett, Esq., Assistant Surgeon.

Cases in which Magnetism and Galvanism were had recourse to, with an account of some novel experiments in Electro-Dynamics, by Robt. Tytler, M. D.

Case of abscess in the liver, by W. Goulon, Esq., Assistant Surgeon.

The three last communications were presented by the Medical Board.

The following papers were then read and discussed ; viz.

Cases of Gastro-Enteritis, with observations, by Wm. Twining, Esq.

Cases in which Magnetism and Galvanism were had recourse to, with apparent advantage, by Robt. Tytler, M. D.

JULY 4, 1835.

The Secretary intimated to the Meeting that copies of Part 2, Vol. VII. of the Society's Transactions had been dispatched for the use of the Members, to the care of the Medical Boards of Madras and Bombay, and of Superintending Surgeons of Divisions, to whom applications are accordingly to be made.

G. Paton, Esq., Assistant Surgeon, was proposed as a Member of the Society, by Dr. Wallich and William Twining, Esq.

The following communications on miscellaneous subjects were then laid before the Meeting:

A letter from Dr. Hunter Lane, of Liverpool, presenting on the part of Dr. Gully and himself, a copy of their translation of Tiedemann's Comparative Physiology.

A letter from Mr. Malcolmson, the Secretary to the Medical Board, Madras, presenting on the part of that Board a copy of his work on Beri Beri and Rheumatism.

A letter from J. Kinnis, Esq., presenting a copy of his Report on Small-pox, as it appeared in Ceylon in 1833-34, and soliciting on the part of the managers of the Ceylon Military Medical Library to be furnished, paying for the same, with copies of such works as the Society had published, or might hereafter publish.

On the motion of Mr. Hutchinson, seconded by Mr. Twining, it was unanimously resolved, that a series of the Society's publications be presented to the Military Medical Library of Ceylon, and that Dr. Kinnis, the Secretary of that Institution, be addressed to that effect.

The following gentlemen requested that their names might be withdrawn from the list of Members of the Society, which was accordingly done; viz. William Graham, M. D., and J. Corbett and J. Lawder, Esqs., Assistant Surgeons, the latter of the Madras Service.

An extract of a letter from S. M. Griffiths, Esq., the Medical Officer attached to Colonel Pasmore's establishment in Persia, dated Shiraz, the 13th of April last.

According to Mr. Griffiths, Persia is the land of intermittent fevers *par excellence*, and a vast number of instances are to be met with, in which the bad effects of a stimulant mode of treatment are evinced; these show themselves in dropsies, and in enlargements and indurations of the Liver and Spleen. Mr. Griffiths states, that he has extensively practised bleeding in the cold-stage, and that he continues to do so, both in the cases of natives of Persia and of Europeans, with very satisfactory results. The usual mode of treating spleen affections pursued here, Mr. Griffiths states to be equally successful in these affections, when they occur in Persia.

A memorandum descriptive of a cluster of encysted tumors, by Mr. Twining.—Vide Appendix, p. 24.

The following original communications were presented at the meeting; viz.

Case of Ranula, in which the left submaxillary gland was extirpated, by J. G. Malcolmson, Esq., Secretary to the Medical Board, Madras.

Memorandum of dissection of a case of extra Uterine pregnancy, which occurred at Ellichpore, by J. S. Login, Esq., Assistant Surgeon, H. H. the Nizam's Service.

Case of spontaneous rupture of the Spleen occurring in a Sepoy, by John Greig, Esq., Assistant Surgeon, 39th Regiment N. I.

Observations on some of the bad consequences which occasionally arise from the use of lead for various purposes on board ship, by Wm. Twining, Esq.

Notes on irregularities of menstruation, by D. Stewart, M. D.

A detail of some experiments instituted with a view to determine the

effects of Galvanism on the magnetic needle, the cause of the polarity of the needle, and of the variation of the compass, by R. Tytler, M. D.

The following papers were then read and discussed:

On the family of Rizophoreæ, by Wm. Griffith, Esq., Madras Service.—Vide p. 1.

An examination of the arguments for and against operation in cataract, where only one eye is affected, by F. H. Brett, Esq.—Vide Appendix, p. 30.

Case of spontaneous rupture of the spleen occurring in a European, by T. Leckie, Esq., Assistant Surgeon.—Vide Appendix, p. 4.

Case of spontaneous rupture of spleen occurring in a Sepoy, by John Greig, Esq., Assistant Surgeon.—Ditto ditto.

Dissection of a case of rupture of the spleen from violence, by James Hutchinson, Esq.—Ditto ditto.

AUGUST 1, 1835.

G. Paton, M. D., proposed at last meeting, was elected a Member of the Society.

The following gentlemen were proposed as Members of the Society.

D. Trail, Esq., Assistant Surgeon, Madras Establishment, by Dr. Mouat and Mr. Hutchinson.

James Hamlyn, Esq., Assistant Surgeon, Madras Establishment, by Dr. Mouat and Dr. Wallich.

H. R. Bond, Esq., Assistant Surgeon, Bengal Establishment, by Mr. Twining and Mr. Egerton.

H. Bousfield, Esq., Assistant Surgeon, by Dr. Corbyn and Mr. Hutchinson.

Authentic information having been received of the death of the late Major-General Hardwicke, one of the honorary members of the Society, the Secretary intimated to the meeting, that the committee of management had unanimously determined to recommend to the favorable notice of the Society Doctor Robert Brown, the celebrated botanist and naturalist, as a fit successor; Dr. Brown was accordingly ballotted for, and unanimously elected an honorary member.

The following communications were then read:—

A letter from Mr. Bell, of Almorah, descriptive of two cases of uninary calculus. The first occurred in a boy 10 years of age. He had suffered from the disease for four years, and was in consequence sallow and emaciated. A calculus weighing 117 grains, was extracted by the lateral operation: the urine passed by the urethra on the following day, and in eighteen days he was quite recovered. In the second

case the calculus was impacted in the urethra, and in that situation was cut down upon, and extracted.

A note from Mr. Beardsmore, written at the request of Mr. Hutchinson, descriptive of the beneficial effects which he had experienced from smoking the dried flowers of the Mudar in asthma. According to Mr. Beardsmore, he did not derive more than transitory relief either from the Mudar or the Dhatura; but he prefers the former remedy as more manageable, and less pernicious and disagreeable in its effects. The flowers are dried in the shade, and smoked by means of a common pipe, in the quantity of half a drachm. By a trial subsequently made, the remedy would appear to reduce the frequency of the pulse, and to occasion a degree of nausea, but so slight as scarcely to be perceptible; no narcotic effects were observed. Mr. Twining was good enough to take charge of a parcel of the dried flowers, and to promise to report on the remedy at a future opportunity. Mr. Beardsmore in his note speaks highly of the benefit which he received in the cure of his asthma from the white mustard seed, used in the same manner, as for dyspeptic affections.

The following works were presented for the Library:—

Two tracts on the Nuth Grass, and the Mudar, or the Calotropis Procera, presented by the author, Dr. White, of the Madras Establishment, to Mr. Hutchinson, and by the latter to the Society.

Seale's elegant work on the Geognosy of St. Helena, by Dr. Mac-Ritchie of that island.

For the Museum.

An urinary calculus, believed to be of the uric acid species, extracted from a Hindoo boy of 10 years of age, by Mr. Bell of Almorah.

The following original communications were presented at the meeting:—

A statistical account of St. Helena, drawn up by Dr. MacRitchie, Medical Staff of that island.

An account of two cases of Cholera successfully treated by tartar emetic, by T. Chapman, Esq., Assistant Surgeon, Purneah.

A notice of a case of Cholera successfully treated in the same manner, by R. Foley, Esq., Assistant Surgeon, Kotah.

The history of a fatal case of extensive disease of the Spleen, by J. Eccles, Esq., Assistant Surgeon.

A descriptive of the Electro-Magnetic Hemisphere, constructed by R. Tytler, M. D., with a model of the instrument.

A printed account of the Calculo Fractor of L'Estrange. Of this instrument, there are several sets now on the way out, for the use of the Medical Department of this Presidency.

The three last communications were presented by the Medical Board.

The following communications were then read and discussed at the meeting, viz.

A case of Ranula, in which the left submaxillary gland was extirpated, by J. G. Malcolmson, Esq., Secretary, Medical Board, Madras.—Vide p. 13.

Notes on the Mishme Teeta and Pucha Pat, by N. Wallich, M. D., &c.—Vide p. 85.

Memorandum on the medicinal qualities of the Mishme Teeta, by Williem Twining, Esq.—Vide p. 94.

SEPTEMBER 5, 1835.

David Trail, and James Hamlyn, Esqs., Assistant Surgeons on the Madras Establishment, and H. Bousfield, Esq., and H. R. Bond, Esq., Assistant Surgeons on this Establishment, proposed at last meeting, were elected Members of the Society.

John Sawers, Esq., Officiating 3rd Member of the Medical Board of Bengal, and John Scott, Esq., Secretary to the Medical Board of Bombay, were proposed as Members of the Society, the former by J. Langstaff, Esq. and Dr. Swiney, Members of the Medical Board of Bengal, and the latter by George Smyttan and James Orton, Esqs., Members of that at Bombay.

The following communications on miscellaneous subjects were then read.

A note from G. Harding, Esq., Assistant Surgeon, Madras Establishment, requesting that his name might be withdrawn from list of Members of the Society; which was accordingly done.

A letter from Sir W. Burnett, Physician General, returning thanks for a series of the Transactions of the Society, presented for the library of the Royal Naval Hospital at Haslar.

The following work was presented for the Library, viz.

The first and second volumes of a descriptive and illustrative catalogue of the Physiological series of Comparative Anatomy, contained in the Museum of the Royal College of Surgeons of London; presented by the Royal College.

The following original communications were presented at the meeting:—

A sketch of the progress of European Medicine in India, by H. H. Goodeve, M. D., Professor in the new Medical College.

Notes of two cases of rupture of the spleen, by A. Campbell, Esq. Assistant Surgeon, Nepaul.

A case of snake-bite, successfully treated by blood-letting and large doses of Ammonia, by T. J. Smith, Esq., Assistant Surgeon, Horse Artillery, Bangalore.

A case of indurated testicle, successfully treated by Magnetism, by R. Tytler, M. D.; presented by the Medical Board.

For the further proceedings of this Meeting, Vide—Memoir of Mr. Twining, Vol. VIII. p. xxxii.

OCTOBER 3, 1835.

One of L'Estrange's Calculo-Fractors was exhibited to the Meeting by permission of the Medical Board, and the Secretary took the opportunity to mention, that sets of the instrument had been placed at the disposal of Superintending Surgeons of Divisions, for the use of the Medical Officers serving within their several circles.

John Sawers, Esq., Officiating 3rd Member of the Medical Board of Bengal, and John Scott, Esq., Secretary to the Medical Board of Bombay, proposed at last Meeting, were elected Members of the Society.

H. Hough, Esq., Superintending Surgeon of the Saugor Circle, and Allan Webb, Esq., Assistant Surgeon on this Establishment, were proposed as Members of the Society, the former by Mr. Hutchinson and Dr. Cameron, and the latter by Dr. Stewart and Mr. Hutchinson.

R. J. Brassey, Esq., Assistant Surgeon, requested that his name might be withdrawn from the list of Members of the Society; which was accordingly done.

Mr. Corbyn called the attention of the Society to his proposal to be allowed to introduce a Reporter at the Meetings of the Society; the motion having been seconded by Dr. Stewart was, after some discussion, put to the vote, and negatived.

The following communications were then read; viz., two cases of disease successfully treated with Magnetism, by R. Tytler, M. D.

The following work was presented for the Library; viz.

Hutchinson's Report on the Medical Management of Indian Jails, by the author.

The following original communications were presented at the Meeting; viz.

Observations on some diseases of European Seamen in Bengal, by D. Stewart, M. D.

A case of extensive contused wound of the integuments of the head, by R. H. Irvine, Esq.

A case of dislocation of the lower jaws of forty days' standing, successfully treated, by R. H. Irvine, Esq.

The following papers were then read and discussed; viz.

A case of Snake-bite successfully treated by blood-letting and large doses of ammonia, by T. J. Smith, Esq., Assistant Surgeon, Horse Artillery, Bangalore.—Vide p. 95.

Memorandum of a post-mortem examination of a case of Extra-Uterine Pregnancy, by J. S. Login, Esq., Assistant Surgeon.—Vide Appendix, p. i.

Case of Abscess of the Liver, by Wm. Gordon, Esq., Assistant Surgeon.—Vide ditto, p. ii.

NOVEMBER 7, 1835.

H. Hough, Esq., Superintending Surgeon of the Saugor Circle, and Allen Webb, Esq., Assistant Surgeon, proposed at last Meeting, were elected Members of the Society.

The following gentlemen were proposed as Members of the Society, viz.

Donald Stewart, M. D., Assistant Surgeon on the Bombay Establishment, by Mr. Hutchinson and Dr. Goodeve.

William Brydon, Esq., Assistant Surgeon on this Establishment, by Drs. Stewart and J. Jackson.

Dr. T. E. Cantor, by Mr. Egerton and Mr. Hutchinson; and Dr. Hughes, Surgeon, on the Madras Establishment, by Mr. Mercer and Mr. Egerton.

The name of R. J. Brassey, Esq. having been removed from the list of Members of the Society, at the previous Meeting through a misunderstanding, was replaced at the request of that gentleman.

J. McGaveston, Esq., Assistant Surgeon, requested that his name might be withdrawn from the list of Members of the Society, which was accordingly done.

A communication was then read from R. H. Irvine, Esq., Assistant Surgeon, descriptive of two cases which had come under his notice.

Presented for the Library.

The Elements of the Theory and Practice of Medicine, by George Gregory, M. D., by the author.

For the Museum.

A morbid preparation of a portion of the Ilium of a Tiger, in a state of ulceration, by P. M. Benza, M. D.

Original communications presented at the Meeting.

An account of two cases of Tumor successfully removed by operation, by William Bell, Esq., Assistant Surgeon, Almorah.

Further cases of Cholera treated by tartar emetic and other remedies, by T. Chapman, Esq., Assistant Surgeon, Purneah.

Memorandum of a post-mortem examination of a Tiger, which died of inflammation and subsequent ulceration of the intestines, by P. M. Benza, M. D.

An account of an instrument constructed by him, and denominated the Electro-Magnetic Rotator, by R. Tytler, M. D.

The following communications were then read and discussed, viz.

Observations on some diseases of European Seamen in Bengal, by D. Stewart, M. D.—Vide p. 143.

Cases of Cholera treated by tartar emetic and other remedies, by T. Chapman, Esq., Assistant Surgeon.

The history of a fatal case of extensive disease of the spleen, by J. Eccles, Esq., Assistant Surgeon.—Vide Appendix, p. iii.

DECEMBER 5, 1835.

Donald Stewart, M. D., Assistant Surgeon on the Bombay Establishment, Dr. Hughes, Surgeon on the Madras Establishment, Dr. Cantor, of Calcutta, and William Brydon, Esq., Assistant Surgeon on this Establishment, proposed at last Meeting, were elected Members of the Society.

The following gentlemen were proposed as Members of the Society:

Dr. Macreery and Mr. Assistant Surgeon Burt, of H. M.'s 9th Regiment, by Dr. Dempster and Mr. Hutchinson, and J. Bowron, Esq., Assistant Surgeon on this Establishment, and Dr. Bain, Practitioner in Calcutta, by Mr. Hutchinson and Dr. Cameron.

Read a letter from Mr. Bell, of Almorah, descriptive of two cases of tumour successfully extirpated by him.

Read a letter from Dr. Benza, Surgeon to the Honorable the Governor of Madras, descriptive of a post-mortem examination of a tiger.—Vide Appendix, p. xxiii.

Presented for the Library.

A small work in Sanscrit and Nagree, entitled Chikitsharnava, or the River of Medicine, by the Rajah Kalikrishna, a Corresponding Member of the Society.

The following original communication was presented at the Meeting:—"Observations on the uses of Iodine and its compounds in Bengal," by D. Stewart, M. D.

The following papers were then read and discussed, viz.

A topographical and statistical account of St. Helena, by Dr. McRitchie, Medical Staff of that island.—Vide Appendix, p. xvii.

Case of dislocation of the humerus, in which reduction was effected after an interval of one month and four days, drawn up by Mr. Reid, of the Colingah Dispensary, and presented by Principal Bramley.—Ditto ditto, p. xxiv.

Notes on irregularities of Menstruation, by D. Stewart, M. D.

JANUARY 2, 1836.

Dr. Macreery, and Mr. Assistant Surgeon Burt, of His Majesty's 9th Regiment; John Bowron, Esq., Assistant Surgeon of the Bengal Establishment; and Dr. Bain, of Calcutta, proposed at the last Meeting, were elected Members of the Society.

The Society then proceeded to elect a Vice-President and Office-Bearers for the ensuing year. Previously to the ballot being taken, Mr. Hutchinson intimated to the Society that he wished not to be re-elected as their Secretary, expressing his regret at being obliged to withdraw from the office. The state of his health, however, rendered it necessary that he should relieve himself as much as possible from exertion; in addition to which the nature of his other pursuits occupied his time so completely, as to render him incapable of paying that attention to the Society's affairs, which their importance demanded. A vote of thanks was unanimously passed in favor of Mr. Hutchinson, in acknowledgment of his services. The ballot box was then circulated, and the following gentlemen were found duly elected.

Vice-President,	N. Wallich, M. D., F. R. S., &c.
Secretary and Treasurer,	H. H. Goodeve, M. D.
Assistant do. do.	H. S. Mercer, Esq.
Foreign Secretary,	W. B. O'Shaughnessy, M. D.
Members of the Committee of Management,	D. Stewart, M. D. C. C. Egerton, Esq. J. Hutchinson, Esq. A. Garden, Esq.
Members of the Committee of Papers,	M. J. Bramley, Esq. W. Cameron, Esq.

A case of Weiss' Lithotrity instruments were presented for the inspection of the Society, by J. Hutchinson, Esq.

The following work was presented for the Library:—

The Dravya Guna (or the quality of food) in Sanscrit, with a Bengáli version, by Rajah Kalikrishna, presented by the author.

Read a letter from O. Wray, Esq., Surgeon, European Regiment, expressing that gentleman's wish to have his name withdrawn from the Society.

A letter from J. Scott, Esq., of Bombay, acknowledging the receipt of a package containing the Transactions of the Society.

The following communications were then presented:—

A memorandum of two cases of Hydrocele, treated by Iodine injection, by D. Stewart, M. D.

An account of several cases of sloughing ulcer which prevailed amongst the jail prisoners at Purneah, by T. Chapman, Esq.

A case of incipient Leprosy, by C. Morehead, Esq.; presented by the Medical Board.

Cases of fever of a malignant type occurring in Sepoys at Agra; presented by the Medical Board.

MEMBERS PROPOSED.

Richard O'Shaughnessy, Esq. Surgeon of Calcutta, proposed by Dr. W. B. O'Shaughnessy, and seconded by Dr. Goodeve.

The following propositions were then made to the Society, and carried.

Proposed by Dr. Stewart and seconded by Dr. Innes, that all subscriptions to the Society shall be payable in Company's Rupees in lieu of Sicca.

Proposed by C. C. Egerton, Esq., and seconded by Dr. Dempster, that the monthly abstract of periodicals, accompanied by an abstract of the proceedings of the Society, be resumed.

Dr. O'Shaughnessy briefly called the attention of the Society to an article by Messrs. Brett and Bird, quoted in the Journal of Medical Science for January, 1836, as a confutation of his views regarding a new principle described by Dr. O'S. as existing in the human blood. Dr. O'S. stated that the gentlemen alluded to had not followed the proper process for obtaining the new substance, that indeed they could not have succeeded by the plan they adopted. He noticed further a remarkable error committed by the same writers, in some remarks published by them, regarding the presence of urea in the blood,—a fact they denied, because the substance found had the smell of the urinary secretion. This palpable *non sequitur* Dr. O'S. deemed a sufficient reason for distrusting the judgment of these writers on subjects of this nature.

FEBRUARY 6, 1836.

Members Elected.

Mr. R. O'Shaughnessy and Mr. E. W. W. Raleigh, proposed at the last Meeting.

Letters from the following gentlemen were then read:—

From E. T. Harpur, Esq., Surgeon 55th Regt. N. I.; A. Macqueen, Esq., Surgeon H. M.'s 3rd Buffs, and J. Anderson, Esq., Bombay, requesting that their names might be withdrawn from the Society.

From W. Bell, Esq., enclosing a specimen of Friable Calculus, successfully extracted by him.

From Messrs. Beckwith and Co. of Bombay, forwarding the Society's Account Current, and a Hoondie for 248: 13: 8, being the balance of last year's account.

From Thomas Oxley, Esq., forwarding two preparations for the Society's Museum, with a description of the same; viz.

No. 1.—A portion of the base of the left ventricle and a couple of inches of the aorta slit open, shewing an aneurism of one of the pouches of Morgagni.

No. 2.—Specimens of worms found in the heart, pulmonary artery and aorta of a dog.

The subject of the first case was a convict who was said to have received a kick in the scrotum from one of his companions, upon which he immediately expired. On dissection, the pericardium was found to be filled with coagulated blood, produced by the rupture of the aneurism above mentioned.

The worms were found in a terrier bitch above three years old, which had been ailing for some time before her death, exhibiting great restlessness and dejection of spirits. The heart was hypertrofied, and the worms, which were forwarded, were discovered in considerable quantity in the heart twined around the columnæ carneæ and the great vessels, some even in the minute branches of the pulmonary artery. They were small string-like bodies, possessing but little vitality.

A specimen of stony concretion found in the stomach of a cow was presented for the Museum, by J. Hutchinson, Esq., on behalf of the Medical Board.

The following communications were then presented:—

A paper on purulent discharges from the bladder and rectum in hepatic diseases, by J. Mouat, Esq., Surgeon H. M.'s 13th Dragoons.

Sketch of an undescribed species of venomous serpent belonging to the genus *Naja*, by Dr. Cantor.

Cases of sickness prevailing among the Sepoys at Agra, with reports of the Medical Officers attached to the various Detachments affected; presented by the Medical Board.

MARCH 5, 1836.

James Stewart, M. D., Bombay Establishment, Surgeon of His Highness the Nizam's Cavalry, was proposed as a Member of the Society, by Dr. Login, seconded by Dr. Garden.

The Report of the Committee of Management upon the expediency of publishing a Journal of Selections from Periodicals, together with the minutes of the proceedings of the Monthly Meetings, was laid on the table and approved. It was determined in consequence, that a circular should be issued to the Members in the Mofussil, enclosing a copy of the report, and requesting their opinion upon the subject.

The following amendment to the foregoing resolution, by Mr. Hutchinson, was negatived.

That Members in arrears be called on to pay up the amount of such arrears, and that it be announced to the Members generally that the Society are about to publish a Monthly Journal of Selections of two sheets or 32 pages, and that the copies for Members will be lodged with Messrs. Thacker and Co. and may be had on application.

Letters from the following gentlemen were then read :—

From E. W. W. Raleigh, Esq., declining to re-enter the Society, unless permitted to do so without being again ballotted for.

From H. Hewitt, Esq., Surgeon to the Zenobia, forwarding the works of Drs. Clarke and Forbes, which were presented to the Society.

The following works were presented for the Library :—

Medical Bibliography, by Dr. Forbes; presented by the author.

Clarke on Diseases of the Chest; presented by the author.

Volumes 1st and 2nd of the Indian Journal of Medical Science; presented by the Editor.

A very curious specimen of monstrosity, consisting of twin children joined together by an anterior band, was presented to the Society by Dr. Garden, on behalf of Mr. Galt, Assistant Surgeon, 26th Regiment N. I.; and it was forthwith agreed to make over the preparation to the Museum of the Medical College, as the fittest place for its reception.

Dr. Cantor presented an account of two snakes, the Cerberus Grantii and Potamophis Lushingtonii, venomous serpents with fangs behind the maxillar teeth, (à crochets postérieurs of the French.)

Dr. Cantor's sketch of an undescribed species of venomous serpent belonging to the genus Naja, was then read, and some exquisite drawings of the reptile executed by that gentleman in illustration of the paper, were laid on the table.

The shape of this serpent's head resembles that of the Naja Tripudious (the Cobra de Capella) covered above with nine large laminæ in four ranges, the first of which contains two laminæ frontales; the 2nd, two laminæ nasales; third, two laminæ orbitales; fourth, two laminæ occipitales, each of the latter surrounded by two laminæ post occipitales;—these laminæ, as well as the other coverings of the head, are drab, edged with black.

The muzzle is obtuse, with a wide semicircular opening for the tongue, which organ is black, thick and bifurcated.

The mouth large, the upper jaw rather larger than the lower; two rows of palatal sharp reflex distant teeth; two fangs on each side, covered as usual in a duplicature of the palatal membrane: maxillar teeth none. Two rows of sharp reflex teeth in the lower jaw. The nostrils lateral, wide between two laminæ. The eyes large, brilliant, iris golden, pupil round;—the neck dilatable, though in a less degree than that of the Naja Tripudious.

The back of the head is covered with oval smooth scales of an olive green color; those covering the black skin with a black margin, those covering the white without dark edges. Abdominal scuta of a reddish yellow color; between the two lowest rows appear black spots on each side.

The body is thick, cylindrical, tapering towards the tail, covered with smooth imbricate scales of an olive green color; the interstitial skin partly black, disposed so as to form a number of bands converging to the head. The abdominal scuta are long and broad bluish grey, interspersed with black as they approach the tail. The tail is cylindrical, gradually tapering to a sharp point, covered above with hexagonal yellowish green scales marked with black, so that its general appearance is black, divided by yellow rings. Dr. Cantor remarks upon the little confidence which can be placed in the number of the abdominal scuta and subcaudal scutella in distinguishing the different species of serpents, and shews the variety in this particular, which he observed in different specimens of the snake under consideration.

The total length of the specimens of this reptile in Dr. Cantor's possession varies from 7 to 10 feet, the circumference of the body from 6 to 8 inches, the neck from 3 to 5 inches. The natives state

that individuals are found upwards of 12 feet long, and at any rate the size is very extraordinary for a venomous serpent. Dr. Cantor's specimens were caught in the Sunderbunds, and in the neighbourhood of Calcutta. According to the natives, this serpent usually feeds upon others; and those in Dr. Cantor's possession were regularly fed by giving them living snakes once a fortnight, without regard to the latter being venomous or otherwise. Dr. Cantor remarks upon the error of those naturalists who say that ophidians never drink; the contrary of which is most satisfactorily shewn in this variety;—they drink plentifully, and moisten their tongues frequently. This snake differs from the other varieties of venomous serpents in feeding willingly of its own accord when in confinement, though no other ophidian of this class is known to do so. The latter fact in the history of poisonous serpents, stated by Dr. Russel, is fully confirmed by Dr. Cantor.

Dr. Cantor, considering the strong resemblance between this serpent and the Naja Tripudious in the habitus and anatomical arrangement, though it differs from it in other respects, prefers placing it in the genus Naja rather than amongst the Pythous. The fresh poison of the snake is a pellucid fluid of the consistence of solution of gum arabic in water. It reddens litmus paper slightly at first, and when kept for some time, it shews more decided acid qualities: it loses, however, a great deal of its deleterious nature by keeping.

APRIL 2, 1836.

Dr. Stewart, of the Bombay Service, proposed at the last Meeting, was elected a Member of the Society.

Letters from the following gentlemen were then read:

From Dr. Kinnis, of Ceylon, acknowledging the receipt of the publications, presented by the Society to the Military Medical Library of that island.

From Messrs. Arbuthnot and Co., of Madras, forwarding the Society's Account Current with the firm, closed on the 31st December last, shewing a balance in their hands of Sa. Rs. 251 : 4 : 6.

From Principal Bramley, acknowledging with thanks the receipt of the preparation of the double fœtus, presented to the Medical College by the Society, at their last Meeting.

From Mr. Mackinnon, of Tirhoot, addressed to Superintending Surgeon Marshall, forwarding two specimens of urinary calculi, lately extracted by Dr. Mackinnon, from native patients.

From T. Chapman, Esq., of Purneah, enclosing an account of a case of injured spleen, which was excised by Dr. Macdonald of the Station, and accompanied by a portion of spleen which had been removed, and which was presented for the Museum.

The subject of the case was a native about 30 years of age, who was gored in the abdomen by a buffalo: through the wound, which was about three inches in length, protruded a portion of the spleen six days afterwards: the man sought medical advice from Dr. Macdonald, who at first tied a ligature round the mass with a view of interrupting the circulation, and thus causing it to slough off. On further consideration, however, he determined to remove it with a knife, which was accordingly done, and the patient rapidly recovered.

A communication from Mr. Masters, of the Botanical Garden, was then laid before the Meeting. Mr. Masters stated that he had been directed by the Right Honorable Lord Auckland to inform the Society that his Lordship had brought out with him in the *Jupiter*, a number of plants of different kinds, amongst the rest several of a medicinal nature, and he requested the Society to inform him whether any of these were likely to flourish in India; what would be the best method of disposing them, and whether any members of their body resided in situations favorable to the cultivation of the different specimens, so that they might be made over to their charge. Among the list were smilax sarsaparilla, guiacum officinale, pastinaca opoponax, dorstenia, contrayerva, quassia amara, pistacia lentiscus, juniperus sabina, atropa belladonna, &c.

Proposed by Dr. Bramley, seconded by Dr. Goodeve, that a Sub-Committee be appointed to inquire into the matter, in order that a suitable reply to the queries of Mr. Masters might, through that gentleman, be communicated to the Right Honorable the Governor General.

The Members of the Committee to be Messrs. Corbyn, Stewart, and O'Shaughnessy.

This was unanimously agreed to.

The following communications were then presented:

An account of an examination of the double fœtus presented to the Medical College at the last meeting, drawn up by Dr. Goodeve.

Cases of diseased eye, by Mr. W. O. Green, Assistant Surgeon, presented by the Medical Board.

A paper upon mortification, by Dr. Wise, of Hooghly, accompanied by drawings; and a preparation of a diseased hand for the museum, presented by the Medical Board.

It was then proposed by Dr. Corbyn, seconded by Dr. Stewart, that the preparations of the Society's museum be made over to the charge of the Medical College.

This resolution was carried unanimously.

A paper upon some of the consequences arising from the use of lead for various purposes on board-ship, by the late W. Twining, Esq., was then read and discussed.

This paper was an unfinished one which was in progress of preparation at the time of Mr. Twining's lamented decease, and was consequently in many respects imperfect. The paper was written in consequence of several cases of lead poisoning having occurred on board the ships *Broxbornebury* and *Othello*, many of which were brought to Mr. Twining's notice. The ship *Broxbornebury* sailed from England in the spring of 1834, and arrived in the Hooghly on the 23rd September, having touched at Madras, and remained there several days.

While the ship was at Madras, a supply of arrack was taken on board for the use of the ship's crew. Soon after their arrival at the Sandheads the men began to suffer from colic, and in six or seven weeks from the date of the arrival of the arrack on board, a large proportion of the crew were more or less affected with the symptoms of colica pictonum: of these twenty-two came under Mr. Twining's care. On representing to the captain that these diseases must have been produced by the use of lead amongst the crew of his ship, he appeared incredulous, as he could not attribute it to any cause of the kind. The only purposes for which lead had been employed on board were the lining a large harness cask with two divisions, in which the contents of a cask of beef and another of pork, were deposited for daily use; and a leaden pipe through which spirits were pumped up from the casks in the spirit room. It became necessary therefore to ascertain to what extent lead was soluble in the brine of salted meat, or in the brandy which had been used during the voyage to Madras, or in the arrack which had been served out from the date of the ship's arrival at that port. For that purpose several experiments upon these fluids were made.

Experiment 1.—A portion of the brandy was taken; its specific gravity was 932, and with tests it indicated an acid reaction. Two rods of polished lead, weighing grs. $342\frac{9}{000}$ were put into a phial containing 10 ozs. of this brandy, which was covered loosely. At the end of six days the surface of the leaden rods were considerably tarnished. At the end of fifteen days a dense cloud had collected round the rods, the lead had become of a dark-brown color, and the brandy in which they

were immersed was of a much paler color than at first. At the end of forty days there was a large quantity of this colored precipitate found at the bottom of the phial. The rods were removed from the brandy, and found to have lost grs. $5\frac{30}{100}$. The brandy was observed to have lost much of its original color, and its specific gravity was 792.

Experiment 2.—The Madras arrack was clear and transparent: its specific gravity was 933, and with tests it afforded a strong acid reaction. The rods of polished lead, weighing grains $330\frac{80}{100}$, were put into a vial containing 10 ounces of this arrack, which was loosely covered in the same manner as the brandy. In the course of twenty-four hours the surfaces of the rods were in a remarkable degree tarnished, showing a prompt and strong action of the liquid on the lead. At the end of five days the surface of the rods had acquired a brownish or tan color, and their surfaces appeared to have become rough. The discoloration of the surface of the lead gradually increased until they became of a deep brown color, and a small quantity of grey precipitate was observed at the bottom of the vial, the arrack remaining transparent. At the end of forty days the rods were removed from the arrack, and allowed to dry; they were then weighed, and found to have lost grains $7\frac{70}{100}$. At the conclusion of this experiment the arrack was of specific gravity, 972, and was strongly impregnated with lead.

Experiment 3.—Two rods of polished lead, weighing grains $335\frac{20}{100}$ were put into a vial containing 10 ounces of brine in which pork had been pickled and brought from Europe. This liquid was turbid, and so much colored that the appearance of the rods during the time they were immersed in the brine could not be distinctly seen. At the end of forty days the rods when taken from the brine were not perceptibly tarnished, and they were precisely of the same weight as when first put into the brine.

Experiment 4.—A portion of distilled water was then subjected to a similar experiment. At the end of forty days the rods were covered with a slight discoloration, and were found to have gained $\frac{5}{100}$ of a grain, owing to a minute coating of carbonate of lead on their surfaces.

Experiment 5.—The semifluid grease in which the pork had been boiled was then made the subject of experiment, but no trace of lead was discoverable in it. Hence it appeared that the meat had not acquired any noxious properties from the leaden cask in which it had been contained.

The ship *Othello* sailed from Liverpool on the 3rd November, 1826, having taken on board water for the voyage, contained in two large tanks lined with lead. On the 1st April the ship arrived at Calcutta.

During the voyage eighteen of the crew suffered from colica pictonum. The first man was attacked on the 1st December: from that time forward the disease continued to spread among the crew, several of them suffering from relapses:—some had the disease as many as four and even six times during the voyage, the symptoms being very severe and distressing. From these circumstances Dr. Twining concludes that the cause which produced the disease must have existed throughout the whole voyage. Two of the men died at sea: one of these, after he was convalescent, while walking on the ship's deck, was suddenly attacked with apoplexy and expired. This man's death is attributed by Mr. Twining to exposure to the sun. The other died of cholera after his arrival in Calcutta. At the commencement of the voyage, before any of the people were taken ill, there was heavy rain, and the water which could be collected from a canvass awning was collected, and used for cooking and drinking by the crew. When the ship arrived in Calcutta, Mr. Twining was requested by the captain of the *Othello* to examine the water tanks. He found two large tanks of 3 inch plank, lined with thick lead, each of them 13 feet long, 4 feet broad, and 5 feet 3 inches deep.

The water in the starboard tank was about 2 feet in depth, clear and apparently in good condition. A bottle was first filled from the tank, and the water was then completely agitated from the bottom; several bottles were then filled from this water, which was somewhat turbid. From the result of the experiments made upon this water it would appear to have contained lead in considerable quantities; but the paper here ends abruptly in the middle of one of the experiments.

MAY 7, 1836.

W. Mackenzie, Esq., Assistant Surgeon, of the Madras Presidency, was proposed as a Member of the Society by Mr. Everitt, seconded by Dr. O'Shaughnessy.

Letters from the following gentlemen were then read.

From R. Phillipson, Esq., Assistant Surgeon, 19th Regiment Native Infantry, requesting that his name might be withdrawn from the Society.

From J. Mouat, M. D., Surgeon His Majesty's 13th Light Dragoons, stating that several more cases of purulent deposit had occurred in his practice, the particulars of which he should have much pleasure in forwarding to the Society.

From C. Morehead, M. D., Secretary of the Medical and Physical Society of Bombay, forwarding a copy of the rules of that Society.

From Dr. H. Falconer, of Saharunpore, stating, that the Botanical Garden of that station, under his superintendence, presented many advantages for the cultivation of the plants brought out from Europe by the Right Honorable the Governor General, and that he should be very happy to take charge of any of them, which might be spared from other stations.

Several letters were likewise presented from various quarters in reply to the circular on the subject of a proposed Journal, but they were not read, as it was resolved that communications on that subject should be deferred until answers had been received from all the members applied to, when they could be classed together, and the votes taken at once.

The following communications were then presented.

1. A case of protracted ulcer, cured by two applications of Galvanism, by R. Tytler, M. D.; presented by the Medical Board.

The patient was a sepoy who had suffered during several years from a scrophulus sinus in front of the trachea, which had defied every attempt at relief. Dr. Tytler twice applied the wire from the zinc extremity of a galvanic trough to the surface of the sore, and in seventeen days the man was discharged cured.

2. A case of enormous liver abscess in a European, successfully treated, by J. Colquhoun, Esq., Assistant Surgeon, 12th Regiment Native Infantry; presented by Dr. Dempster, His Majesty's 44th Regiment.

3. A letter from Doctor Wallich, forwarding some specimens of a poisonous root, which he had obtained in his late journey in Upper Assam.

Dr. Wallich states that this root is called *bish* or *beesh* by the Mishmees in Upper Assam. It is used by these people for poisoning arrows and spears. They employ the leaf in its fresh and dried state, simply beaten into a pulp with the acid juice of the athenga, (dellenia speciosa;) of the dried root they select such as retain some degree of flexibility, looking upon the others, which are hard, as less efficacious.

Dr. Wallich says, that it resembles the poisonous root of the aconitum ferox of Nepal; and he concludes that the Mishmee root is produced by the same species of plants—that it is, indeed, perhaps the same plant. It is brought down into Assam in baskets of various sizes, the larger of which contains 52 roots each, and it is sold at eight annas the basket. The Mishmees employ it indiscriminately for destroying both man and beast. Dr. Wallich states, that he is not aware

that this poison is mentioned by any other writer than Major Wilcox, who apparently alludes to it in his Memoir in the 17th volume of Asiatic Researches, p. 337, in speaking of the extract of some root with which the Mishmees poison their arrows.

Dr. Wallich then refers the Society to his work upon the Plantæ Asiaticæ Rariores, Vol. I. p. 35, for some account of the Himálaya poison, (the aconitum ferox.)

The letter concludes by recommending an investigation of the chemical properties and physiological operations of the root which the writer presented.

It was forthwith resolved, that a Committee be appointed to carry Dr. Wallich's proposition into effect. The Members to be Drs. Wallich, O'Shaughnessy, Goodeve, and Cantor.

Dr. Mouat's paper on purulent discharges from the bladder, and rectum in hepatic diseases, was then read and discussed.

The author commenced by remarking, that purulent deposits have been known from very remote antiquity; instances having been mentioned by Galen, Scultetus, Par, and others, where the sudden disappearance of abscess have been followed by evacuations of pus from the bladder and rectum. Purulent depositions from these organs have always been attributed to the direct opening of the abscess either into the intestines, gall-bladder, ureters, &c.; but Dr. Mouat's observations have induced him to believe, that in many cases, no such communication has occurred, these discharges being depositions or excretions in the fæcal or urinary passage. He proposed to illustrate this by cases bearing upon the point in question. That this occurrence in hepatic abscess should not have been recorded, is no reason why it should not exist; indeed in the present cases the observation was made accidentally. The author quotes the abscesses which form after fractures, amputations, wounds of the head, &c. as somewhat analogous, for he considers these to act as derivatives from the original seat of the disease; and he asks, why a similar event should not take place in hepatic abscess. He then adduces the known efforts of the system in relieving itself when any of its principal functions are impeded in their natural action, as evidenced in the metastasis which take place in various diseases, and which, however explained, must be allowed to exist. The author mentions also the existence of this in the veins of several people who have died of extensive abscess, as mentioned by Andral and Alison, and the case of hepatic abscess related by Mr. Twining, where pus was found in the right ventricle of the heart. We may look, therefore, he observes, to the vascular system as the probable cause

of the removal and subsequent secretion of the matter in the cases which form the subject of his paper. The Doctor then gives thirteen cases of Europeans affected with liver abscess in which pus was passed, by stool in 10, by urine in 11, by vomiting in 1, by expectoration in 4: of these 7 died and the rest recovered. On dissection of those who died, no trace of communication was discovered between the abscess and any of the outlets through which the matter had made its way; by analogy the author concludes that those who recovered were similar cases. In two instances the disease was complicated with diseased veins, having the pathognomic symptoms of Beri-beri. In almost all the above-mentioned cases, the discharge of pus afforded great relief to the hepatic disease: the swelling of the side diminished, and the patient was easier. In those which were cured, the improvement produced by the discharges was permanent. It appeared almost critical. The discharges in several instances were simultaneous with the action of mercury on the system. Dr. M. remarks, that, although in many instances of dysentery and hepatitis there is found extensive disorganization notwithstanding the most free action of mercury, nevertheless, he has observed the remission of acute disease is generally synchronous with ptyalism, and the appearance of pus always tends to quiet the constitutional disturbance and alleviate urgent symptoms.

In an appendix the author remarks upon the distinction usually drawn between phlegmasia dolens and phlebitis; and observes, that in the cases brought to his notice, the symptoms of both have been conjoined; whence he is led to believe them only varieties of the same affection, both as to violence and the order of vessels and tissue implicated, as well as some peculiarity of action in the vessels themselves, as seen in the application of blisters, where the discharge is generally watery and limpid, yet in some cases it becomes a gelatinous mass. Dr. Mouat in this part of his communication details the experiments made by Mr. McGregor, of His Majesty's 39th Regiment, upon the matter discharged in one of the cases related in the paper. These consisted of the usual processes with sulphuric, nitric, and muriatic acids. That gentleman admits the well known uncertainty of the results which attended experiments of this nature, and the impossibility of ascertaining, exactly, the distinction between pus and mucus, but that, as far as he could judge, the deposits submitted to his experiments undoubtedly were pus.

Dr. Macdonald observes, that in the course of the experiments which he made upon these reports, he observed, that the pus taken from the breast of a native woman six months pregnant, when dropped into

several boiling solutions, coagulated. In a solution, Carbonate of potash and ammonia, a perfect coagulum was obtained; and in muriate of ammonia, a very consistent coagulum took place from very watery pus.

Some blood taken from the woman above-mentioned presented upon the under side of the coagulum some discolorized spots. These spots ran towards the centre of the clot. In the clot last obtained some of these spots became converted into an excavated scab, having the appearance of lymph or pus dried. The rounded part in both cases looked like tubercle, or the masses described by Carswell as appearing in the blood in the spleen of tubercular subjects.

JUNE 4, 1836.

Wm. Mackenzie, Esq., A. M. of the Madras Establishment, proposed at the last meeting, was elected a Member of the Society.

Dr. A. Stewart, of the Bengal Presidency, was proposed as a Member by Dr. Dempster, seconded by Dr. D. Stewart.

Letters from the following gentlemen were then read:—

From H. Duff, Esq., Surgeon 38th Regiment, requesting his name might be withdrawn from the list of subscribers to the Society.

From Messrs. Arbuthnot and Co. of Madras, enclosing a draft for the balance of the Society's account with them, viz. Rs. 277-2-9.

From Messrs. Parbury and Allen, enclosing their account with the Society, shewing a balance due to them of £21-7-7. Their bill for periodicals furnished for June 1834 to Nov. 1835, being £28-11, less the product of sales on behalf of the Society £7-3-5.

From Dr. M'Clelland, presenting to the Society a copy of his work on Kemaon.

From H. Stevenson, Esq., Assistant Surgeon, proposing that instead of the contemplated Journal, five Circulating Libraries should be established in different parts of the Presidency to supply the members with periodicals. Mr. Stevenson conceives that the expense of these would not exceed that of a Journal of selections, and that members would prefer reading the periodicals for themselves to having matter extracted from them by others. The writer thinks that Dinapore, Cawnpore, Agra, Neemuch, and Delhi should be chosen for the library stations, whence the books might be circulated to the neighbourhood. A committee of 3 or 4 members, with a secretary and librarian, having the Superintending Surgeon for the president, might be chosen to conduct the affairs of each library.

From Dr. Wallich, enclosing an extract from Royle's work on the Botany of the Himálaya Mountains, including some interesting remarks on the subject of materia medica, pointing out the importance of inquiries being made with the view of bringing to light the ample resources of this country in the production of medicinal articles, and strongly recommending the subject of the native materia medica to the notice of the medical officers in India.

Dr. Wallich fully concurs in these remarks, and trusts that the Medical Society will use all its efforts to promote so desirable an object. He concludes by offering his services in forwarding the views of the Society in this matter. The extract will be found at pages 275 and 276 of Dr. Royle's work. It contains also a short account of the genus Colotropis or Mudar—by which the above-mentioned observations are preceded.

A copy of the proceedings of the Bombay Medical Society were laid on the table.

It was proposed by Dr. Goodeve, seconded by Dr. Ranken,—That an application be made to Government to grant the Society the indulgence formerly enjoyed by them, of transmitting their communications free of postage.

This was agreed to, and the President, Vice-President, and Dr. Ranken, were appointed to form a deputation to wait upon the Right Honorable the Governor General for the purpose of submitting this request to his consideration.

The following papers were then read and discussed.

Sketches of two undescribed venomous serpents with fangs behind the maxillar teeth, by Dr. Cantor.—Vide p. 137.

Account of a human monstrosity in the museum of the Medical College, drawn up by Dr. Goodeve.—Vide Appendix, p. xxxi.

JULY 2, 1836.

Dr. A. Stewart, Assistant Surgeon, proposed at the last meeting, was elected a Member of the Society.

The following gentlemen were then proposed as Members.

J. Drummond, Esq., Surgeon to the Right Honorable the Governor General, by Mr. Bramley, seconded by Dr. Goodeve.

Dr. Marshall and J. Dodgson, Esq., Assistant Surgeons of the Bengal Establishment, by J. Dempster, Esq., seconded by Dr. D. Stewart.

Letters from the following gentlemen were then read.

From J. Boswell, Esq., Assistant Surgeon, Prince of Wales Island, J. Forsyth, Esq., Assistant Surgeon of the 55th Regiment Native

Infantry, and E. Watson, Esq., Assistant Surgeon of the 69th Regiment Native Infantry, requesting that their names might be withdrawn from the Society.

From W. Kerr, Esq., of Paisley, acknowledging with thanks the compliment of his election as a corresponding member of the Society.

From D. S. Young, Esq., Staff Surgeon, Nizam's Army, describing the properties and mode of preparation of a species of oil, a specimen of which he forwarded to the Society for trial.

The oil is the expressed juice of the Moorung Kai, (the Hyperanthera Morunga of Botanists,) and is said to be the basis of Macassar oil. Mr. Young states that it is quite equal to that far famed oil for all the purposes for which oil is applied to the hair, and that it is used by the native doctors as an external application in rheumatism.

The oil is of a beautiful straw color, perfectly clear and transparent, congealing at a low temperature. Mr. Young thinks its use may supersede the expensive patent hair oils at present so extensively employed.

From G. Playfair, Esq., containing a description of a set of native lithotomy instruments with which several operations for urinary calculus had been successfully performed by a native doctor. The letter was accompanied by the instruments themselves, consisting of a knife and a blunt hook like a small vectis. They are both of the rudest description, especially the former, which is apparently an old gardener's clasp knife, the blade about two inches long, the edge nearly as blunt as the back, and attached to the handle by a most ricketty joint; indeed it is hardly conceivable how any one could operate with such tools; but Dr. Playfair states that he has seen several of the calculi which had been extracted by this apparatus, and the operation has been witnessed by one gentleman of his acquaintance.

Dr. D. Stewart then laid before the Society the details of a case of cholera, in which a solution of salts had been injected into the veins, but without success.

The patient, a pale, slender individual, 34 years of age, was admitted into the General Hospital at 9 A. M. on the 1st of this month. At 12 the night before he had been seized with sickness at stomach, slight cramps in the lower extremities, and he had passed one loose evacuation, for which he took compound jalap powder, after which he had upwards of twenty loose stools and frequent vomiting, and general spasm of the extremities. When he came into hospital his skin was cold and wet with perspiration, fingers shrivelled, countenance livid and shrunk. A scruple of calomel was administered, with 3 grains of opium,

followed by spirit ammonia aromatica one drachm—mistura camphoræ, one ounce and a half, and a sinapism to the epigastrium; brandy and sago occasionally. At 10 A. M. 10 grains calomel, with 6 of colocynth and two drops of ol. caryophili, were ordered to be taken every half-hour with the camphor and ammonia. At $3\frac{1}{2}$ P. M. the blue color of the face and extremities was well marked, purging continued, but there were no cramps; tongue was thickly furred; pulse a mere flutter. He had already taken 80 grains of calomel. Dr. Stewart resolved therefore to try injection into the veins. Accordingly a vein having been opened in the arm, four pints of the following solution was injected.

Carbonate of soda,..... 2 scruples.
Muriate ditto,..... 3 drachms.
Distilled water at the temperature of 114° f., 4 pints.

During the operation the pulse rose, the patient perspired freely, face became flushed, and eyes animated. The voice, which was previously puerile, recovered its natural tone. The skin of the extremities remained warm for half an hour, but pulse continued very unsteady. He continued sensible until $5\frac{1}{2}$ P. M., when he gradually sunk, and died in convulsions. On examining the body after death, the viscera of the abdomen were found vascular, liver large, of a pale buff color, gall-bladder shrunk, and containing but little bile.

The right ventricle of the heart was distended with fluid blood, containing numerous air bubbles, a great part of which gushed out with a gurgling noise. The same appearance was observed in the right auricle and superior cava. The brachial vein gave out two or three small bubbles of air. Dr. Stewart remarks that in injecting the solution the greatest caution was used, and he is convinced that not a particle of air entered the vein.

In consequence of some discussion which arose upon this communication, it was proposed by Dr. Corbyn, seconded by Dr. Cantor, that the members of the Society present at the meeting be formed into a Committee to experiment upon and report on the extent to which injection into the veins may be practised with safety upon animals, and likewise the effects of aqueous solutions of saline substances at different temperatures. Dr. O'Shaughnessy to be the secretary of the Committee.

This resolution was unanimously agreed to.

A case of extensive liver abscess, successfully opened by A. Colquhoun, Esq., was then read and discussed.—Vide p. 156.

AUGUST 6, 1836.

The following gentlemen, proposed at the last meeting, were elected Members of the Society,

J. Drummond, Esq., Surgeon to the Right Honorable the Governor General.

Dr. Marshall and J. Dodgson, Esq., Assistant Surgeons of the Bengal Presidency.

Letters from the following gentlemen were then read.

From C. Ducat and L. Hathway, Esqs., Assistant Surgeons of the Bombay Presidency; Robert Davis, Esq., H. M. 39th Regt.; and G. King, Esq., Surgeon, Chunar, requesting that their names might be withdrawn from the Society.

From A. Garden, Esq., on behalf of Dr. Guthrie, of Allahabad, to the same purport.

From J. Ludlow, Esq., Superintending Surgeon, Barrackpore, stating his inability to continue a member of the Society, and presenting the library with 8 vols. of the London Medical Journal.

From the Royal Medico-Chirurgical Society of London, returning thanks for the last number of the Transactions presented to them.

From C. Morehead, M. D., Secretary of the Bombay Medical Society, forwarding the 2nd number of the Proceedings of that Society.

From A. Campbell, M. D., Nipal, stating that it will afford him much pleasure to take charge of such plants as the Society may think advisable to forward to him from amongst those brought to India, by the Right Honorable Lord Auckland.

From W. Dunbar, M. D., in charge of the Ramghur battalion, to the same effect, stating that the climate of Dorunda, where he is stationed, resembles closely that of Hazareebaug, and presents, consequently, a favorable opportunity for the cultivation of some of the aforesaid plants, particularly the atropa belladonna and guiacum officinale.

From Dr. Smyttan, of Bombay, stating that the Society's agents at that place have closed their business, and that there is consequently no person at that presidency to whom the members can pay their subscriptions. A letter was received also from W. Taylor, Esq., of Bombay, to the same effect.

It was consequently determined that Dr. Morehead be requested to point out an agent.

A preparation of scirrhus of the pylorus was presented for the museum by Dr. Beattie, of Allahabad, through Dr. Ranken.

Part of a paper on mortification, by T. Wise, M. D., of Hooghly, was then read.

Dr. Wise commences by defining life to be an additional property of organic structure, beyond that of simple inorganic matter, which pervades in different degrees all its parts, and renders it capable of resisting the physical effects of surrounding agents. The weakening of this principle to a certain degree causes death, so in like manner the weakening of local vitality may destroy the part so weakened by its irritation, leading to the death of the patient in some cases; in others ending by the removal of the destroyed portion. This partial destruction of vitality is denominated mortification. Dr. W. divides gangrene, 1st, into that which is produced by local diseases or injuries; 2ndly, into that which is produced as a symptom of the state of the constitution; 3rdly, the specific action of certain substances, as the ergot of rye, &c.

The causes of accidental gangrene, he says, act either directly or indirectly. The *direct* causes are the cessation of circulation, destruction of nervous energy, or the action of sedatives employed to weakened parts, as in violent bruises or extensive wounds, including large blood-vessels or nerves, tight ligatures, cold, eschorotics, &c. Dr. W. gives several cases illustrative of this variety, consisting of severe injuries of the limbs, chiefly compound fractures followed by mortification.

The indirect causes of accidental gangrene act as stimuli to parts already much weakened, as applying heat to a part weakened by cold, or exciting an action greater than the power of the part can continue to perform. Dr. W. then describes the usual symptoms and phenomena of gangrene. He considers the shrinking and dark color to be vital actions. He combats the notion that the filling up of the blood-vessels with a plug of coagulated blood is the effect of *mere* coagulation of dead blood. He attributes it, and the subsequent closure of the vessels, to an increase of vitality in the blood, which fluid, he says, is no longer capable of remaining in a fluid state when its vitality is much increased, but that it becomes fluid again as soon as the increased vitality is removed. The excitement of the blood-vessels in these cases, he believes, produces the exalted vitality of the contained blood.

The author remarks, that the rapidity with which gangrene advances, depends on the vitality of the part or of the tissue, and its distance from the trunk. From a knowledge of this fact the Surgeon amputates a mortified limb before the line of separation between the living and dead matter is marked; even when the cellular tissue is in a state of gangrene. The indications of cure of this species of mor-

tification are, 1st, removal of the exciting causes; 2nd, removal of distressing symptoms, by reducing too great vascular action by means of anti-phlogistics, and allaying irritability and pain by opiates; 3rd, promotion of equable circulation by heat and moisture, except in mortification produced by cold, or when opposed to the patient's feeling; 4th, supporting the vigor of the system by tonics and nourishing diet, wine, &c.

With regard to the propriety of amputation, Dr. Wise remarks that each case has its own peculiarities, and the Surgeon must be guided by them in his opinion. Of the feasibility and advantage of the operation in many cases of traumatic gangrene, there is abundant proof; and in gangrene from cold it is peculiarly applicable, because there is less danger of the disease returning.

The lateness of the hour and the length of the paper rendered it necessary to postpone the remainder of Dr. Wise's communication till the next meeting.

SEPTEMBER 3, 1836.

Letters from the following gentlemen were read:

From B. P. Rooke and A. Montgomery, Esqs., Assistant Surgeons of the Bombay Establishment, requesting that their names might be withdrawn from the Society.

From John Erskine, Esq., presenting to the Society in the name of the author, a work on the Carlsbad Waters, by Chevalier John De Carro, M. D., with observations on the microscopic animalcules of the neighbourhood of Carlsbad, by A. I. Corda.

The following work was also presented for the Library by Dr. Brander of Poorie:—Rayer's Treaties on diseases of the Skin, translated by W. Dickenson.

Dr. D. Stewart laid before the meeting a case of complicated disease of the liver, heart and colon.

It was proposed by Dr. Goodeve, seconded by Dr. Jackson, that a certain sum be set apart annually from the funds of the Society for the purchase of standard medical works, and that the number of periodicals taken by the Society should be increased.

This resolution was unanimously agreed to, and it was referred to the committee of management to make the necessary arrangements for carrying it into effect.

APPENDIX.

A report drawn up by Dr. Cantor, of some experiments performed by the committee entrusted to examine the substance brought from Assam by Dr. Wallich, and supposed by him to be analogous to the Aconitum ferox, was then read.

From these experiments it would appear that the above root is altogether innocuous, and cannot be identical with the Nipal poison. It was inserted into the stomach of several dogs without producing any effect whatever. The alcoholic and watery extracts, the powdered root alone, and mixed with the Dillenia speciosa (in the manner described by Dr. Wallich as followed by the Assamese) were severally tried with the same result.

The following papers were then read and discussed.

The conclusion of Dr. Wise's paper on mortification, postponed from the last Meeting.

Dr. Campbell's cases of rupture of the spleen and kidney.—Vide Appendix, p. xxxiv.

The second species of gangrene, or symptomatic gangrene, is divided by Dr. Wise into that of tissue and of organs. The first variety is again subdivided into mortification, as produced by diseases of the vascular system of the cellular mucus, and osseous tissue.

Under the first head is comprehended cases of gangrene caused by inflammation and other unnatural conditions of the vascular system, as ossification of the arterial coats, obstruction of the circulation in the extreme parts of the body, and diseased valves of the heart; causes which lead to a diminution of the nourishment and vitality of the extremities: mortification occurs in consequence of inflammation, when a vital part is excited beyond what is natural, or to a greater degree than its inherent powers will sustain. Hence it occurs most frequently in the extreme parts of the body, and in weak individuals; and it attacks tissues which are endowed with a trifling degree of vitality, in preference to those which are highly vital.

In speaking of gangrene as it occurs in weak debilitated individuals, the author remarks upon the danger of amputating the limbs of those people, from the great probability that the disease will attack the stump and the patient; he conceives also that in these cases there is a great predisposition to phlebitis, which should make us peculiarly careful how we excite that disease by tying or otherwise irritating the veins after amputation, should that operation be performed. Dr. W. quotes some cases in illustration of these remarks.

Mortification of the cellular tissue is said by the author to be very frequent, from the low state of vitality of that structure. In this variety

is included erysipelas, phlegmonoides, carbuncle, and the sloughing of sores, especially syphilitic ulcers. Mortification of the mucous tissue is divided into gangrene of the mouth; of the throat, as in angina gangrenosa; and mortification of the stomach and intestines.

With regard to the second variety of this species of mortification, or the gangrene of organs, Dr. W. observes that it is exceedingly rare, but when present is almost invariably fatal. The brain, lungs, and liver are occasionally found gangrenous.

The third species of mortification is called specific gangrene by the author. In this species are included mortifications produced by the use of improper articles of food, or inoculation with animal poisons. The first relates chiefly to the ergot of rye. The fourth is subdivided into several varieties; 1st, malignant pustule, or a species of sloughing boil, occurring in unhealthy situations amongst weak and debilitated individuals, and those who are employed as attendants upon animals affected with pustular diseases and carbuncles; the disease being attended with considerable fever and constitutional disturbance, often proving rapidly fatal; 2nd, pestilential bubos occurring in the course of the plague; 3rd, hospital gangrene, of which a very elaborate and lucid description is given: in the course of which Dr. W. remarks upon the frequency of this disease in India amongst prisoners in the jails of Bengal. Under this head the author comprehends sloughing phagedæna of a venereal character. The author speaks warmly of the employment of nitric acid in sores of this description, as well as those of hospital gangrene, more strictly speaking. The fifth and last variety is dropsy, which not unfrequently produces gangrene of the extremities*.

* The above is but a very brief and imperfect abstract of Dr. Wise's extremely elaborate paper, but it is impossible to make one more complete in a report of this nature.

List of Donations for the Library.

2nd May, 1835.

By the Publishers. — The first No. of the United States Medical and Surgical Journal.

J. N. Casanova, M. D. By the Author. — General Observations respecting Cholera Morbus.

J. B. Thornhill, Esq. — A brief account of the Ophthalmic Hospital at Macao.

J. Hutchinson, Esq. — Harris de Morbis Acutis Infantum; and Hamilton on the Use and Abuse of Mercurial Medicines.

6th June, 1835.

Wm. Griffith, Esq. — Three different Pamphlets, containing accounts of various late improvements in the Microscope.

4th June, 1835.

Hunter Lane, and Dr. Gully. — A copy of their translation of Tiedemann's Comparative Physiology.

J. G. Malcolmson, Esq. — A copy of his Work on Beri-beri and Rheumatism.

J. Kennis, Esq. — A copy of his Report on Small-pox as it appeared in Ceylon in 1833-34.

1st August, 1835.

Dr. Wight, of Madras Establishment. — Two tracts on the Nuth Grass, and the Mudar or Calotropis Procera.

M. D. McRitchie, Esq. — Seale's elegant work on the Geognosy of St. Helena.

5th September, 1835.

Royal College, — The first and second volumes of a Descriptive and Illustrative Catalogue of the Physiological Series of Comparative Anatomy, contained in the Museum of the Royal College of Surgeons of London.

3rd October, 1835.

J. Hutchinson, Esq. — Hutchinson's Report on the Medical Management of Indian Jails.

7th November, 1835.

G. Gregory, M. D. — The Elements of the Theory and Practice of Medicine.

5th December, 1835.

Rajah KALI KRISHNA,	A small work in Sanscrit and Nagree, entitled Chikitsharnava ; or the River of Medicine.

2nd January, 1836.

Ditto,	The Dravya Guna, (or the quality of foods,) in Sanscrit, with a Bengalí version.

5th March, 1836.

Dr. FORBES, presented by the Author.	Medical Bibliography.
By the Author.	Clarke on Diseases of the Chest.
By the Editor,	1st and 2nd volumes of the Indian Journal of Medical Science.

4th June, 1836.

J. McCLELLAND, Esq.	A copy of his Work on Kemaoon.
Bombay Medical Society.	A copy of the Proceedings of the Bombay Medical Society.

6th August, 1836.

S. LUDLOW, Esq.	Eight volumes of the London Medical Journal.
C. MOREHEAD, Esq.	The 2nd Number of the Proceedings of the Bombay Medical Society.

3rd September, 1836.

JOHN ERSKINE, Esq.	A work on the Carlsbad Waters, by Chevalier John DeCarro, M. D. with observations on the Microscopic Animalcule of the neighbourhood of Carlsbad, by A. J. Corda.
J. M. BRANDER, M. D. of Pooree,	Rayer's Treatise on Diseases of the Skin, translated by W. S. Dickenson.

List of Donations for the Museum.

Dr. Wallich, for Col. Cooper,	Convolvulus Nil.
W. Bell, Esq.	A Urinary Calculus. Specimen of Friable Calculus.
P. M. Benza, M. D.	Preparation of a portion of the Ilium of a Tiger.
T. Oxley, Esq.	A portion of the base of the left Ventricle, and a couple of inches of the Aorta slit open, shewing an Aneurism of one of the pouches of Morgagni. Specimen of worms found in the heart, pulmonary artery, and aorta of a dog.
J. Hutchinson, Esq. for the Medical Board,	Specimen of a stony concretion found in the stomach of a cow.
Dr. Garden, for A. Galt, Esq.	Preparation of a double fœtus.